











# CONTRIBUTORS

## STUDY OF YELLOW FEVER

1. The International and National Bureaus of the  
Office of the United States Department of Health  
Bureau of Hygiene and Prevention of Disease  
1900-1901 to 1901-1902

By J. M. TOWNE, M. D.

2. The International and National Bureaus of the  
Office of the United States Department of Health  
Bureau of Hygiene and Prevention of Disease  
1902-1903 to 1903-1904

By W. M. WOODWARD, M. D.



1901-1902



CONTRIBUTIONS  
TO THE  
STUDY OF YELLOW FEVER.

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A.—THE DISTRIBUTION AND NATURAL HISTORY OF YELLOW  
FEVER IN THE UNITED STATES; WITH CHART SHOWING  
ELEVATIONS OF LOCALITIES WHERE IT HAS APPEARED  
FROM A. D. 1668 TO A. D. 1874,

By J. M. TONER, M. D.

B.—THE YELLOW-FEVER EPIDEMIC OF 1873; REPORTS FROM  
MEDICAL OFFICERS, U. S. MARINE-HOSPITAL SERVICE,  
WITH NOTE BY THE SUPERVISING SURGEON,

JOHN M. WOODWORTH, M. D.



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# THE DISTRIBUTION AND NATURAL HISTORY OF YELLOW FEVER AS IT HAS OCCURRED AT DIFFERENT TIMES IN THE UNITED STATES.

BY J. M. TONER, M. D.,

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THE map which accompanies this paper, and which indicates the region where yellow fever has prevailed, either in an epidemic or in a sporadic form since the settlement of our country, is made up from notes taken in the study of the geographical distribution of the diseases of the United States.\*

No special opportunities for studying the disease in question are claimed, nor originality in the mode of presenting the facts. Nevertheless, the map is believed to be accurate as far as it goes, if the data derived from past and contemporary medical literature can be relied upon.

Nor is it pretended that this paper is exhaustive, localities not named having, no doubt, been visited by this fever; but we are confident such localities will be found within the region of its general distribution, as here indicated.

The table accompanying this paper, which furnishes mainly the data upon which the map is projected, gives the names of the cities and other localities where yellow fever has occurred in our country from its first settlement, arranged by States in alphabetical order, with the years and dates of its appearance and disappearance.

The elevation of each locality above the sea-level, as far as possible, has been given from reliable sources. In some instances the elevation of a place is assumed from a general knowledge of the altitude of the surrounding country. The errors in these, if any, will be unimportant.

The influence upon localities of elevation above the sea-level, with the exemption from yellow-fever they seem to thence possess, is the view we here wish to call to the attention of sanitarians and of the profession.

We are inclined to give much weight to the theory that diseases have geographical areas and limits, modified somewhat by topographical and climatic conditions, which determine the types of disease as do climate and elevation the fauna and flora of a locality.

The fact has always been patent to the profession, that there are parts of the earth in which particular forms of disease occur, to the almost entire exclusion of others. The study of the causes of this difference is

\* The map herewith published is projected from a large one, 8 by 10 feet in size, for the execution of which Dr. TONER desires to express his indebtedness to the kindness of the Hon. WILLIS DRUMMOND, Commissioner of the United States Land Office.—W.

as important as any that can engage the attention of the physician. As a simple factor elevation will, we apprehend, be found to possess qualities both preventive and curative.

We shall in this paper studiously avoid discussing the questions whether yellow fever is a specific disease or not; whether it is always imported; or whether under certain conditions it may originate within our own country.

Nor do we aim to speak as an expert, never having seen a case of yellow fever, but rather appear as a collator of facts in its history. At the present time the natural history of disease, if we may so use the term in describing the special characteristic distribution of diseases that exist in limited geographical areas, is attracting much attention. There can be no doubt that an accurate knowledge of the climate and other physical peculiarities, and of the prevailing meteorological conditions of a region, will greatly aid the sanitarian and physician in preventing sickness, and in treating successfully the diseases incident to a locality.

The more exact and extended this information becomes, the more definitely can physicians mark out the boundaries and the distribution of diseases over the globe, and suggest measures of relief.

The chief factors usually and most naturally taken into account in the study of the salubrity of a State, or even a city, are latitude, longitude, the extremes of heat and cold and mean annual temperature, the prevailing direction of the winds, the general humidity of the air, and the annual precipitation, drainage, etc.

These undoubtedly furnish most valuable information, but there is another important element, that of elevation, which has the power to intensify or counteract the influence of most of them.

The most insalubrious regions are, confessedly, the savannas and tide-water lands of the tropic and temperate zones. The impression is quite general that persons of the same nationality, living on mountains or high table-lands are more rugged and healthy, as a general rule, than their friends engaged in similar occupations on the low lands in the same latitude.

The accompanying map enables us, in a comprehensive way, to consider the question whether elevation has presented any barrier to the progress of yellow fever in the United States, by bringing all localities where it has prevailed, with their altitudes, before the eye at one time.

The fact will be patent to any one that the low lands of the Gulf States and the Atlantic coast, with the water-courses emptying into them, are the regions of its most frequent visitations in the United States.

The conceded home of yellow fever is in the West Indies and the Bahamas, with a portion of the adjacent continents of North and South America. A square formed by the forty-fifth and the one hundredth degrees of longitude, and the thirty-fifth north and the fifth south latitude, will include the favorite region of this disease.



Although originating within the square named, history shows that it may prevail on the sea-coast in any locality within the tropics, north and south of the equator, where malarial fevers prevail, and the daily average of the thermometer is over 75° or 80° with a high dew-point for weeks or months together.

If these latter conditions, however, were the only ones necessary to the development of this disease, it should prevail much more widely; for they exist, during parts of the summer at least, in almost all of our Atlantic cities, as may be seen by reference to the record of temperature as shown by the admirable isothermal maps in Lorin Blodgett's *Climatology*.

There are, no doubt, other climatic conditions essential to its origin, if not to its propagation and spread. Once the disease has become epidemic in a place, it can exist at a much lower average daily range of the thermometer than seems to be required for its development.

It is, however, always controlled in its severity and checked in its spread, or entirely arrested by storms, heavy rains, and, most effectually, by frost. This has been exemplified by the polar waves, or "northers," that occasionally blow from the Arctic regions down over Texas, and by long-continued rains.

Yellow fever does not prevail in the East Indies nor in China. It has appeared in most of the maritime cities of the United States on the Atlantic coast, as far north as Boston, and indeed has been chronicled at Quebec and Halifax. But while it is true that it has thus visited many of the cities and towns on the sea-coast, it has, fortunately, never extended far into the interior of our country.

In the United States, it seems to prevail in the large sea-ports and in localities along the navigable water-courses having their outlet in the Gulf of Mexico. Dr. Drake, many years ago, observed that while the disease had appeared at almost every town on the Mississippi, as far up as Vicksburg, that Woodville, twelve miles from the river, was the most remote inland point it had reached. During the late epidemic at Shreveport, a number of deaths occurred, according to the report of the Howard Association, at points outside the city limits—distances from the city not given. The places named are Caddo Parish, Marshall, Greenwood, and Summer Grove.

The same accurate observer (Dr. Drake,) remarks that yellow fever is eminently a disease of cities rather than of rural districts, and of villages rather than of scattered country dwellings. It has been shown that towns of small population are less liable to suffer than larger ones, and the same town within the yellow-fever zone, as its population increases, is more likely to suffer than when its population was less. Hence density of population, or proximity of numerous individuals approaching to crowding, is believed to be a factor of no small influence in the propagation and spread of the disease.

Its appearance in a locality is generally coincident with bilious intermittents, and the first cases are said always to occur near the water in the lowest and most insalubrious places.

It has been observed that its epidemical limits coincide with the range of the growth of the live-oak, the cypress, and the long mosses. Certainly the regions of our country most frequented by this disease are particularly low and flat, with numerous rivers and much marsh and swamp lands, as may be inferred from the localities and their elevations marked on the map. These low lands are to a considerable extent covered with the cypress, long-leaved pine, and other indigenous trees, with thick undergrowth when in an unredeemed or natural state. The northern limit of the growth of the cypress is not much north of Norfolk.

Yellow fever has been considered by nearly all writers a distinct disease from the autumnal remittent fevers of the temperate zone. All agree that it is indigenous at Vera Cruz on the Gulf of Mexico. When we examine into the climatic conditions of this locality, nothing special or satisfactory as an explanation of the peculiarities and origin of the disease has been discovered.

Protracted average high temperature is a constant factor there, but this of itself is deemed insufficient. The time has, perhaps, not come, if it ever does, for the discovery of all the elements entering into its development.

No doubt there are numerous undiscovered factors and conditions, essential to its existence and present in varying intensity, in different years, and which greatly add to its rapid spread and virulence. The mortality from the disease at the same place is much greater in some seasons when the conditions of heat and moisture are apparently the same. Again, extreme heat and dryness stop the epidemic, as do heavy and protracted rains.

As we have already stated, the conditions of long-continued heat, averaging over  $75^{\circ}$  throughout the twenty-four hours, and great humidity exist almost constantly during the summer in the Gulf States. Occasionally during the summer season, for months together, this condition of high temperature, but with less moisture, may exist in many of the coast cities of our country, as far north as Boston, and yet rarely ever are these cities visited by this disease in an epidemic form.

Is the exemption of these more northern coast cities due alone to climatic conditions, or are they in part exempted by sanitary and quarantine regulations? Yellow fever is almost annually reported on vessels at the quarantine stations, where it is fortunately arrested and prevented from entering the cities. In the table of the localities where the disease has prevailed, no distinction has been made between the city proper and the quarantine stations which, in a more careful study, should be made.

The average annual distribution of moisture throughout our country is made manifest by a glance at Chas. A. Schott's Tables and Results of



the Precipitation in Rain and Snow, published in 1872 by the Smithsonian Institution, a most valuable contribution to knowledge in this direction. The humidity in the atmosphere is relative to the season, and, as is well known, the absolute humidity is greater in the summer than in the winter, warm air having a greater capacity to contain moisture than cold air, as the following table from Professor Guyot will show. This table expresses, in troy grains, the weight of vapor contained in a cubic foot of saturated air at the stated temperatures of Fahrenheit :

Temperature of air.	Vapor in grains.	Temperature of air.	Vapor in grains.	Temperature of air.	Vapor in grains.
0°	0.545	63°	6.361	80	10.949
5	0.678	64	6.575	81	11.291
10	0.841	65	6.795	82	11.643
20	1.298	66	7.021	83	12.005
30	1.968	67	7.253	84	12.376
32	2.126	68	7.493	85	12.756
40	2.862	69	7.739	86	13.146
45	3.426	70	7.992	87	13.546
50	4.089	71	8.252	88	13.957
55	4.860	72	8.521	89	14.378
56	5.028	73	8.797	90	14.810
57	5.202	74	9.081	91	15.254
58	5.381	75	9.372	92	15.709
59	5.566	76	9.670	93	16.176
60	5.756	77	9.977	94	16.654
61	5.952	78	10.292	95	17.145
62	6.154	79	10.616	96	17.648

To see how far the conditions of a higher than ordinary average of temperature and a greater degree of humidity may have existed in Memphis and Shreveport during the prevalence of the epidemic of the past summer, we have been enabled, through the courtesy of General Myer, to tabulate the returns, nearly complete, made from Memphis to the United States Signal Bureau for the months of August, September, October, and November, 1872 and 1873. The former year, being healthy at this place, is included for the purpose of contrast. The meteorological tables for Shreveport are compiled from the observations furnished by Dr. J. L. Moore, of Shreveport, the regular observer for the Smithsonian Institution at that point. In addition to the ordinary observations, Dr. Moore gives the daily number of deaths occurring from yellow fever, which, for convenience, is placed in a parallel column on the side of the meteorological table, and on the line of the other daily observations. For Shreveport we are not able to give the observations in 1872 for contrast:

TABLE SHOWING THE METEOROLOGICAL CONDITIONS OBSERVED AT SHREVEPORT, LA., DURING THE YELLOW-FEVER EPIDEMIC OF 1873.

Compiled from the Register of Meteorological Observations under the direction of the Smithsonian Institution, J. L. Moore, M. D., Observer, to which is added the daily Number of Deaths from Yellow Fever.

SHREVEPORT: County of Caddo, State of Louisiana; latitude, 32° 30' north; longitude, 93° 45' west; height above the sea-level, 228.52 feet.]

Day of month.	Thermometer in the open air.				Rain-fall inches.	Amount of cloudiness.			Winds.*						Barometer reduced to freezing-point.	Relative humidity or fraction of saturation.			Deaths from yellow fever.	
									7 a. m.		2 p. m.		9 p. m.							
	7 a. m.	2 p. m.	9 p. m.	Mean.		7 a. m.	2 p. m.	9 p. m.	Direction.	Force.	Direction.	Force.	Direction.	Force.		Mean.	7 a. m.	2 p. m.		9 p. m.
Aug. 1	79	88	81	82½	...	4.4	1.2	3.4	S. W.	5	S.	5	0	0	30.111	86	55	83	...	
2	80	89	84	84½	...	1.4	4.4	0	S. W.	6	0	0	0	0	30.068	82	53	79	...	
3	80	90	85	85	.01	1.2	3.4	1.4	S. W.	7	N. W.	5	N.	1	30.083	82	53	79	...	
4	80	80	79	79½	.40	3.4	4.4	1.4	E.	6	N. E.	12	0	0	30.132	78	78	87	...	
5	74	84	78	78½	...	3.4	3.4	0	N. E.	8	N. E.	7	N. E.	5	30.135	76	53	69	...	
6	74	87	81	80½	...	1.4	1.2	1.4	N. E.	6	N. E.	7	N.	5	30.065	72	45	70	...	
7	80	81	80	80½	...	4.4	4.4	1.2	0	0	E.	5	0	0	29.986	78	55	82	...	
8	78	88	77	81	.13	0	4.4	3.4	S. E.	1	0	0	E.	2	29.994	73	52	77	...	
9	77	87	81	81½	...	1.4	3.4	3.4	E.	5	E.	7	E.	1	30.055	82	55	78	...	
10	76	87	80	81	...	4.4	3.4	4.4	E.	2	E.	8	E.	1	30.102	91	58	82	...	
11	81	90	83	84½	...	1.2	3.4	0	N. E.	4	S. E.	8	N.	4	30.031	78	60	71	...	
12	82	91	81	84½	...	3.4	3.4	4.4	N.	2	E.	5	E.	4	30.038	79	57	78	...	
13	78	91	85	84½	...	3.4	3.4	1.2	S. W.	6	S. W.	7	S. W.	2	30.014	86	54	72	...	
14	80	90	76	82	.60	3.4	3.4	1.2	0	0	S. W.	7	0	0	29.971	82	56	91	...	
15	76	91	77	81½	.24	3.4	3.4	4.4	N.	4	N.	2	S. E.	8	29.895	91	60	91	...	
16	75	85	79	79½	...	4.4	4.4	3.4	N. E.	4	N. E.	4	0	0	29.939	90	68	87	...	
17	76	82	79	79	.05	4.4	4.4	1.2	N.	8	N.	5	N. E.	5	29.997	91	83	78	...	
18	78	85	79	80½	...	1.2	1.4	0	N. E.	5	N. E.	6	0	0	30.062	69	41	70	...	
19	77	85	79	80½	...	1.4	1.2	1.4	N. E.	1	E.	4	0	0	30.043	69	44	66	...	
20	76	85	81	80½	...	3.4	1.2	1.4	E.	1	S. E.	4	S. E.	4	29.961	73	47	67	...	
21	76	82	79	79	...	1.4	1.4	0	S. W.	1	N.	7	E.	2	29.969	77	83	78	...	
22	79	86	79	81½	...	1.2	3.4	0	0	0	E.	7	N. E.	2	30.029	74	48	74	...	
23	76	86	79	80½	...	3.4	3.4	0	E.	2	E.	5	0	0	30.076	82	58	82	...	
24	81	88	84	84½	...	0	1.2	1.4	S.	2	N. W.	5	0	0	30.107	70	49	75	...	
25	81	90	83	84½	...	0	1.2	1.2	S.	1	N. E.	4	0	0	30.037	74	50	75	...	
26	79	90	77	82	...	3.4	3.4	3.4	W.	6	N.	4	S. W.	2	30.020	78	53	82	...	
27	78	91	86	85	...	0	1.2	0	S. W.	1	N. E.	1	0	0	30.016	78	51	68	...	
28	78	91	81	83½	...	1.4	1.4	1.4	N. W.	4	N. E.	2	S. E.	2	30.053	73	54	70	...	
29	79	84	80	83	.05	0	3.4	0	S. W.	1	0	0	S. E.	4	30.118	74	68	87	...	
30	80	91	84	85	...	0	1.2	0	S.	2	S.	5	S. W.	6	30.175	82	48	64	...	
31	80	89	82	83½	...	0	1.2	1.4	0	0	0	0	S. E.	1	30.133	74	50	71	...	

REMARKS.—Normal summer-heat for this latitude prevailed during the month; mean temperature 82.56; highest at 2 p. m., 91° on the 12th, 13th, 15th, 27th, 28th, and 30th; lowest, 80° on the 4th. Force of wind remarkably uniform and moderate, scarcely rising at any time above the degree of "gentle." Yellow fever: The first death from yellow fever in Shreveport this summer was observed on the 20th day of August, which date proved the beginning of the epidemic of 1873. Total deaths from the disease during the month, 29.

\* The force is estimated and registered by figures from 1 to 10, as in the first column of the following table. The figures in the last column, expressing the number of miles per hour, are used in the above.

1. Very light breeze.....	2 miles per hour	6. Gale.....	45 miles per hour.
2. Gentle breeze.....	4 do.	7. Strong gale.....	60 do.
3. Fresh breeze.....	12 do.	8. Violent gale.....	75 do.
4. Strong wind.....	25 do.	9. Hurricane.....	90 do.
5. High wind.....	35 do.	10. Most violent hurricane.....	100 do.

† The numbers under the head of "Relative humidity" denote the percentage of saturation; full saturation being indicated by 1, and half saturation by 0.5.

Table showing the Meteorological Conditions observed at Shreveport, La., during the Yellow-Fever Epidemic of 1873—Continued.

Day of month.	Thermometer in the open air.				Rain-fall, inches.	Amount of cloudiness.			Winds.						Barometer reduced to freezing-point.	Relative humidity or fraction of saturation.			Deaths from yellow fever.	
									7 a. m.		2 p. m.		9 p. m.							
	7 a. m.	2 p. m.	9 p. m.	Mean.		7 a. m.	2 p. m.	9 p. m.	Direction.	Force.	Direction.	Force.	Direction.	Force.		Mean.	7 a. m.	2 p. m.	9 p. m.	
Sept. 1	79	86	83	82½	...	0	3.4	1.4	S. W.	4	S.	5	0	0	30.071	.78	.58	.71	6	
2	78	91	81	83	...	1.2	1.2	4.4	S. W.	7	S.	7	S.	7	30.042	.82	.45	.70	5	
3	79	92	83	84	...	3.4	3.4	1.4	S. W.	6	S. W.	10	S.	4	30.022	.82	.45	.60	5	
4	72	92	82	84	...	3.4	1.2	0	S. W.	5	S.	5	S.	4	30.052	.82	.43	.63	2	
5	79	91	85	85	...	1.4	1.4	1.2	S. W.	2	N. W.	5	0	0	30.127	.82	.36	.64	4	
6	77	91	79	82½	...	3.4	1.2	3.4	N.	1	N. E.	6	N.	14	30.167	.77	.45	.74	7	
7	74	83	72	76	.01	1.2	3.4	3.4	N. E.	7	N. E.	12	N. E.	2	30.214	.76	.67	.71	10	
8	68	79	71	72½	...	1.2	1.2	1.4	N. E.	2	N. E.	10	N. E.	4	30.178	.70	.58	.62	11	
9	67	85	77	76	...	1.4	3.4	3.4	N. E.	5	N. E.	5	0	0	30.074	.69	.51	.73	2	
10	75	87	79	80½	...	1.2	1.2	1.4	N. E.	1	N. E.	4	S. E.	2	30.065	.77	.69	.70	15	
11	77	87	81	81	...	1.4	1.2	1.2	N. E.	1	N.	4	S. E.	4	30.050	.73	.65	.59	18	
12	77	76	73	75½	...	4.4	4.4	4.4	0	0	S. E.	6	S. E.	5	29.999	.75	.82	.90	15	
13	69	76	70	71½	1.56	4.4	1.4	0	S. W.	1	N. E.	1	N. E.	10	30.076	.90	.64	.80	26	
14	61	69	64	64½	.06	0	0	0	N. E.	7	N. E.	7	N. E.	7	30.140	.71	.56	.78	24	
15	64	81	69	71½	...	0	0	0	N. E.	2	S. E.	4	E.	1	30.121	.68	.41	.85	31	
16	67	83	73	74½	...	0	1.4	0	E.	2	E.	6	0	0	30.107	.74	.30	.67	24	
17	69	85	74	76	...	0	1.4	0	0	0	E.	2	0	0	29.978	.70	.41	.76	18	
18	70	87	79	78½	...	0	1.4	0	E.	1	N. E.	1	0	0	29.899	.80	.45	.74	19	
19	75	87	72	78	...	0	1.2	0	N. E.	2	N. E.	1	N. E.	2	29.939	.72	.49	.76	16	
20	63	77	69	69½	...	0	1.4	0	N. E.	6	E.	7	N. E.	4	30.028	.62	.46	.56	14	
21	63	80	69	70½	.01	3.4	3.4	0	E.	4	N. E.	7	N. E.	6	30.021	.67	.51	.75	15	
22	65	71	68	68	.05	4.4	1.2	1.4	0	0	N. E.	10	N. E.	2	30.002	.78	.85	.95	18	
23	66	78	68	70½	...	0	3.4	0	N. E.	5	N.	7	N.	5	29.970	.89	.54	.84	11	
24	62	85	74	73½	...	0	1.2	0	S. E.	2	S. W.	2	S.	8	29.866	1.00	.47	.76	10	
25	70	87	75	77½	...	0	1.2	0	S.	4	S. E.	4	S. E.	2	29.935	1.00	.62	.77	14	
26	73	83	76	77½	...	1.4	3.4	4.4	S. E.	6	S.	5	S. E.	5	29.988	.85	.83	.82	15	
27	75	82	74	77	.48	4.4	4.4	1.2	S. E.	10	S. E.	4	S. E.	5	29.981	.90	.75	1.00	20	
28	77	87	80	81½	...	3.4	1.2	1.2	S. E.	2	S.	4	S.	6	29.928	.91	.62	.82	11	
29	72	76	69	72½	.12	4.4	4.4	4.4	N. E.	13	N. W.	6	N. E.	13	30.066	.95	.32	.95	7	
30	64	74	64	67½	...	4.4	1.4	0	N. E.	7	N. E.	6	N. E.	7	30.146	.73	.76	.73	7	

REMARKS.—Extremes of temperature during this month: Highest at 2 p. m., 92°, on the 4th; lowest, 59°, on the 14th; mean for the month, 75° 14'. Humidity appears much greater than last September. Wind variable in force and direction. Yellow fever: Heavy mortality from yellow fever during this month, proving most fatal about the middle of the month, averaging seventy-five per cent. Total deaths from the disease, 406.

Table showing the Meteorological Conditions observed at Shoreport, La., during the Yellow-Fever Epidemic of 1873—Continued.

Day of month.	Thermometer in the open air.				Rain-fall, inches.	Amount of cloudiness.			Winds.						Barometer reduced to freezing-point.	Relative humidity or fraction of saturation.			Deaths from yellow fever.	
									7 a. m.		2 p. m.		9 p. m.							
	7 a. m.	2 p. m.	9 p. m.	Mean.		7 a. m.	2 p. m.	9 p. m.	Direction.	Force.	Direction.	Force.	Direction.	Force.		Mean.	7 a. m.	2 p. m.		9 p. m.
Oct. 1	61	75	67	67½	...	0	2.4	1.2	N. E.	5	N.	5	N. E.	7	30.083	.55	.44	.69	5	
2	65	79	71	71½	...	3.4	0	0	N. E.	2	N. W.	2	N. W.	1	30.090	.73	.43	.80	11	
3	69	84	77	76½	...	0	1.2	0	N. E.	2	N. E.	2	N. E.	1	30.028	.75	.54	.69	16	
4	73	88	80	80½	...	0	1.2	0	S.	1	W.	5	0	0	29.953	.72	.40	.70	7	
5	74	82	80	80½	...	0	3.4	1.4	0	0	N. W.	2	0	0	29.915	.73	.43	.70	11	
6	61	66	57	61½	...	1.4	0	0	N.	18	N. E.	14	N.	10	30.137	.61	.32	.47	12	
7	54	64	59	59	...	0	0	0	N.	4	N.	5	0	0	30.136	.55	.34	.70	6	
8	54	68	63	61½	...	3.4	3.4	0	0	0	E.	6	S. E.	2	30.116	.74	.56	.67	12	
9	55	77	69	67	...	0	1.2	1.2	S. E.	1	S. E.	7	S. E.	2	30.129	.61	.61	.75	10	
10	64	79	69	70½	...	0	3.4	0	0	0	E.	5	0	0	30.178	.78	.47	.75	2	
11	65	87	75	75½	...	4.4	1.2	0	0	0	N. W.	2	0	0	30.184	.78	.45	.68	3	
12	66	74	65	68½	...	0	0	0	0	0	N. E.	10	N. E.	1	30.217	.54	.29	.49	7	
13	57	73	61	63½	...	0	0	0	N. E.	1	E.	2	S. E.	5	30.163	.63	.24	.71	7	
14	56	74	65	65	...	0	0	0	0	0	E.	10	S. E.	4	30.186	.69	.36	.68	7	
15	62	79	73	71½	...	3.4	1.2	1.4	S. E.	1	S. E.	10	S. E.	4	30.277	.72	.51	.63	5	
16	70	77	73	73½	...	.05	4.4	4.4	1.2	S. E.	2	S.	4	1	30.190	.90	.77	.81	5	
17	69	80	75	74½	...	.01	1.2	3.4	4.4	S. E.	4	S. W.	8	8	30.040	.80	.87	.78	7	
18	67	70	59	65½	...	1.17	4.4	1.2	1.4	N.	12	N.	8	14	30.106	.95	.53	.70	2	
19	50	60	52	54	...	0	0	0	0	0	N.	5	N. W.	2	30.253	.65	.29	.60	7	
20	46	70	56	57½	...	0	0	0	0	0	N. W.	7	N. E.	2	30.073	.77	.36	.81	5	
21	49	71	65	61½	...	0	1.2	0	S. E.	2	N. W.	18	N.	7	29.860	.78	.49	.63	3	
22	63	68	50	60½	...	1.00	4.4	4.4	4.4	S. E.	2	S. W.	13	N. W.	7	29.969	.89	.95	1.00	4
23	41	49	47	45½	...	1.06	4.4	0	0	N.	8	N. E.	8	N. E.	4	30.193	.91	.93	.85	6
24	39	53	48	46½	...	.01	1.4	1.4	4.4	N. E.	4	S. E.	4	E.	6	30.246	.91	.80	1.00	3
25	48	62	63	57½	...	.85	4.4	4.4	4.4	E.	5	S. E.	4	S. E.	4	30.133	1.00	.83	.94	2
26	68	78	61	69	...	4.4	4.4	4.4	4.4	S.	5	S. W.	5	N. W.	12	29.936	1.00	.91	.77	5
27	45	60	54	53	...	3.4	1.4	0	N. W.	4	N.	5	S. W.	4	30.088	.84	.39	.61	5	
28	37	47	40	41½	...	0	0	0	N.	7	N. W.	19	N. W.	8	30.454	.63	.28	.56	4	
29	33	55	47	45	...	0	0	0	0	0	S. W.	2	S.	4	30.376	.89	.62	.48	3	
30	42	67	53	54	...	0	0	0	S. W.	4	W.	10	N.	1	30.170	.74	.60	.86	3	
31	45	57	47	49½	...	0	0	0	N.	8	N. E.	10	N. E.	4	30.341	.61	.31	.62	4	

REMARKS.—Extremes of temperature: Highest at 2 p. m. 88°, on the 4th; lowest, 47°, on the 28th; mean for the month, 62°.68. Variable winds; fluctuating barometer; thunder-storm on the 26th of the month; greatest force of the wind sixty miles an hour. *Yellow fever*: An abatement of the yellow fever as shown by mortality, was noticed about the middle of September and continued through this month, making a difference of 210 in deaths. Total deaths from yellow fever for November, 196.



Table showing the Meteorological Conditions observed at Shreveport, La., during the Yellow Fever Epidemic of 1873—Continued.

Day of month.	Thermometer in the open air.				Rain fall, inches.	Amount of cloudiness.			Winds.						Barometer reduced to freezing point.	Relative humidity or fraction of saturation.			Deaths from yellow fever.
	7 a. m.	2 p. m.	9 p. m.	Mean.		7 a. m.	2 p. m.	9 p. m.	Direction.	Force.	Direction.	Force.	Direction.	Force.		Mean.	7 a. m.	2 p. m.	9 p. m.
Nov. 1	44	66	58	56	...	1-2	3-4	4-4	E.	4	S.	5	S. E.	1	30.313	.60	.50	.70	1
2	53	56	58	55½	1.18	3-4	4-4	4-4	N. E.	5	S. E.	2	N.	6	30.162	.80	1.00	1.00	...
3	54	57	54	55	.25	4-4	4-4	4-4	N. E.	7	N. E.	2	N. E.	6	30.182	1.00	.87	.93	2
4	54	60	58	57½	.32	4-4	4-4	4-4	N. E.	6	N. W.	2	N. W.	2	30.074	1.00	.68	.94	1
5	56	60	58	58	.07	4-4	4-4	4-4	N.	4	0	0	N.	4	30.106	1.00	.72	.94	1
6	55	68	61	61½	...	3-4	3-4	0	N. W.	6	N.	0	N.	0	30.042	.93	.65	.88	2
7	51	73	62	62	...	0	0	0	W.	2	S. W.	6	W.	2	30.016	1.00	.46	.77	...
8	55	71	56	60½	...	0	0	0	N.	4	N.	1	N.	4	30.230	.80	.37	.81	2
9	47	74	60	60½	...	0	0	0	0	0	W.	2	0	0	30.224	.92	.29	.65	...
10	51	78	66	65	...	0	0	0	0	0	W.	2	S.	2	30.116	.86	.29	.50	1
11	56	79	62	65½	...	1-4	0	0	S. W.	7	S. W.	2	N. W.	4	30.000	.69	.35	.46	...
12	47	54	48	49½	...	1-4	0	0	N.	12	N. W.	16	N. W.	4	30.271	.48	.32	.36	...
13	35	59	50	48	...	0	0	0	0	0	S. W.	4	S. W.	7	30.179	.70	.47	.80	...
14	42	67	58	55½	...	1-4	3-4	3-4	S.	2	S.	1	S.	4	30.171	.74	.33	.58	...
15	55	69	64	62½	...	3-4	4-4	4-4	S.	4	S. W.	6	S.	6	30.135	.87	.65	.83	...
16	65	74	66	68½	...	4-4	1-2	0	S. W.	5	S. W.	8	N. W.	30	29.966	.99	.59	.19	...
17	51	73	68	64	...	1-2	0	1-4	N. W.	6	N. W.	20	S. W.	4	29.623	.52	.17	.22	...
18	53	58	48	53	...	3-4	0	3-4	N. W.	4	N. W.	30	N.	20	30.033	.67	.26	.51	...
19	54	53	58	55	...	0	0	0	N. W.	1	N. W.	13	0	0	30.271	.45	.24	.64	...
20	35	60	53	49½	.05	0	3-4	4-4	S. E.	2	S.	5	S.	4	30.179	.70	.20	.73	...
21	49	64	61	58	8.50	4-4	3-4	4-4	E.	2	S. E.	2	S. E.	6	30.135	.92	.67	.77	...
22	60	66	64	63½	3.85	4-4	4-4	4-4	S. E.	4	S. E.	2	N. E.	2	29.853	.94	.84	1.00	...
23	62	62	59	61	...	4-4	4-4	4-4	N. E.	10	E.	11	N.	4	29.808	.88	.94	.94	...
24	47	50	48	48½	...	4-4	4-4	0	N.	11	N. W.	5	W.	4	30.119	.92	.72	.85	...
25	66	63	55	61½	...	1-4	3-4	1-2	W.	4	N. W.	11	0	0	30.168	.69	.33	.50	...
26	45	63	55	54½	...	3-4	3-4	1-2	S. E.	2	S.	6	S.	12	29.930	.76	.47	.68	...
27	52	63	57	57½	...	4-4	1-2	4-4	S.	5	S.	1	0	0	29.985	1.00	.67	.81	...
28	45	46	45	45½	...	4-4	4-4	4-4	N. E.	11	N. E.	5	E.	4	30.345	.53	.47	.53	...
29	40	59	53	50½	...	4-4	0	1-2	E.	0	S. E.	4	S. E.	2	30.355	1.00	.48	.73	...
30	51	70	63	61½	...	0	4-4	1-4	S.	6	S.	6	S.	2	30.275	1.00	.61	.78	...

REMARKS.—Mean temperature for the month, 57.45°; highest at 2 p.m., 79°, on the 11th; lowest, 46°, on the 28th; first frost, night of the 12th and 13th. *Yellow fever*: Yellow fever continued to abate, until the 10th of the month, when the last death occurred; total deaths from yellow fever for the month, 10.

## TABLE OF THE METEOROLOGICAL CONDITIONS OBSERVED AT MEMPHIS, TENN.

Compiled from the Reports of the Signal-Service, U. S. A., for Comparison

[MEMPHIS: County of Shelby, State of Tennessee; latitude 35° 07' north;

Thermometer.					Amount of cloudiness.*						Wind.						Humidity, per cent.			
1872.	7.35 a. m.	4.35 p. m.	11 p. m.	Mean.	Rain-fall, inches.	7.35 a. m.	4.35 p. m.	11 p. m.	7.35 a. m.	4.35 p. m.	11 p. m.	7.35 a. m.	4.35 p. m.	11 p. m.	Barometer,†	7 a. m.	2 p. m.	9 p. m.		
Aug.						Lower.	Upper.	Lower.	Upper.	Lower.	Upper.	Direction.	Velocity.	Direction.	Velocity.	Mean.				
1	72	89		80.50		0	2-4	0	2-4			N. W.	6	N. W.	4	30.07	.85	.56		
2	76	85	77	79.66		0	1-4	0	1-4	2-4	0	N. E.	5	N. W.	11	N. W.	2	30.09	.72	.46
3	73	81	70	74.66		0	0	0	1-4	0	0	N. E.	4	N. W.	11	N. E.	4	30.11	.71	.44
4		82	71	76.50				0	2-4	0	0	N. W.	10	N. E.	6	N. E.	6	30.16		.45
5	69	70	90	76.33		0	1-4	0	1-4	0	0	N. E.	4	N. E.	6	N. E.	4	30.15	.70	.50
6	74	82	78	80.00		0	0	0	2-4	0	0	N. E.	1	N. E.	4	N. E.	3	30.14	.76	.52
7	72	90	85	84.33		0	1-4	0	2-4	1-4	0	N. E.	1	N. E.	4	N. E.	3	30.11	.73	.47
8	80	84	78	82.00		1-4	0	0	2-4	0	0	S. E.		E.	3	S. W.	0	30.10	.74	.55
9	78	94	75	82.33		0	1-4	0	1-4	4-4		S. E.		S. E.		E.	0	30.10	.77	.40
10	77	90	80	82.33		0	2-4	0		1-4	0	0	0	S. W.		E.	0	30.05	.73	.44
11	80	93	83	85.33		0	0	0	2-4	1-4	0	S. E.		S. E.		S. E.	0	30.05	.78	.48
12	81	78	76	78.33		1-4	0	2-4	1-4	3-4	0	S. W.		S. E.		S. E.	0	30.06	.78	.77
13	77	85	79	80.33		0	1-4	2-4	1-4	1-4	2-4	S. E.		N. W.		W.		30.06	.81	.68
14	79	82	79	82.00		0	2-4	0	1-4	0	0	W.	10	N. W.		N. E.		30.02	.82	.46
15	75	85	76	78.66		0	0	0	4-4	0	0	N.		N. W.		N. W.		30.07	.6	.41
16	74	82	77	79.66		0	0	0	2-4	0	0	0	0	N. W.		0	0	30.05	.81	.37
17	75	91	78	81.33		0	0	0	1-4	0	0	S. W.	1	S. E.	4	S. E.	4	30.18	.77	.40
18	78	92	79	83.33		0	1-4	0	1-4	0	0	S. E.	1	N. E.	4	S.	0	30.20	.70	.43
19	72	93	82	84.33		0	0	0	1-4	0	0	S.	1	S. E.	4	S. E.	4	30.22	.70	.43
20	80	93	82	85.00		0	0	0	2-4	0	0	0	0	E.	2	0	0	30.20	.70	.43
21	81	93	83	85.66		0	0	0	2-4	1-4	0	0	0	0	0	0	0	30.22	.70	.43
22	80	94	83	86.00		S.	2-4	0	1-4	0	1-4	0	0	N. W.	4	0	0	30.17	.78	.40
23	82	94	84	86.00		0	0	0	2-4	1-4	1-4	0	0	0	0	N. E.	1	30.03	.74	.40
24	82	96	84	86.00		0	0	0	1-4	1-4	0	N. E.	1	S. W.	5	S. W.	7	29.96	.69	.39
25	83	98	84	89.33		0	1-4	0	1-4	1-4	0	0	0	N. W.	4	0	0	30.02	.67	.38
26	82	97	84	89.33		0	1-4	1-4	1-4	2-4	0	S. E.	1	N. E.	4	S.	1	30.06	.70	.37
27	80	93	82	85.00	.54	0	2-4	1-4	2-4	1-4	0	S.	1	W.	4	0	0	30.02	.78	.48
28	80	95	84	86.33		S.	1-4	0	1-4	1-4	0	S.	1	W.	6	S. W.	2	29.97	.78	.44
29	79	85	84	76.66		0	2-4	0	2-4	2-4	0	N. W.	4	N. W.	12	N. E.	7	29.99	.77	.58
30	68	80	66	71.33		0	1-4	0	1-4	1-4	0	N.	6	N. E.	10	N. E.	1	30.08	.74	.30
31	62	72	66	68.66		1-4	2-4	0	1-4	1-4	0	N. E.	4	N. E.	7	N. E.	4	30.09	.66	.29
Sept.																				
1	60	63	69	70.66		0	0	0	0	0	0	N. E.	3	N. E.	6	N.	4	30.17	.59	.21
2	64	75	73	74.00		0	0	0	1-4	1-4	0	E.	1	N. W.	8	N.	1	30.16	.67	.32
3	65	77	75	75.66		0	0	0	1-4	1-4	0	E.	1	N. W.	6	0	0	30.10	.73	.27
4	69	89	75	77.66		0	1-4	0	0	0	0	0	0	S. W.	8	0	0	30.01	.84	.32
5	69	91	79	79.66		S.	H.	S.	H.	0	0	S. W.	1	S. W.	10	S.	4	29.96	.70	.39
6	74	92	79	81.66		0	0	0	2-4	0	0	S.	5	S. W.	9	S.	3	30.01	.67	.37
7	75	93	82	83.33		1-4	0	0	1-4	0	0	S.	1	S.	6	S. W.	1	30.04	.68	.40
8	76	93	80	83.00		0	0	0	1-4	0	0	S.	2	S. W.	10	S.	3	29.99	.68	.40
9	76	89	76	80.33		0	1-4	0	2-4	0	0	S.	1	S. W.	7	S.	2	30.02	.68	.46
10	71	91	81	81.00		S.	0	0	1-4	1-4	1-4	0	0	W.	4	S. E.	6	30.02	.71	.36
11	76			76.00	1.10	0	2-4					N.	1					30.02	.72	
12																				
13	59	74	65	66.00		0	0	0	0	0	0	N. W.	5	N. W.	10	N. W.	4	30.20	.87	.39
14	60	75	65	66.66		0	0	0	0	0	0	N.	4	W.	12	N. W.	1	30.20	.70	.36
15	60	77	66	67.66		0	0	0	0	0	0	0	0	W.	8	N.	1	30.13	.70	.41
16	60	79	71	70.00		S.	0	0	2-4	0	2-4	N. W.	1	N. W.	8	N.	8	30.07	.82	.40
17	60	77	65	67.33		0	1-4	0	0	0	0	N. E.	1	N. E.	6	0	0	30.08	.65	.31
18	58	74	75	72.33		S.	1-4	0	0	0	0	0	0	S. W.	5	S. W.	6	29.98	.77	.40
19	61	74	61	65.33		0	0	0	0	0	0	0	0	S. E.	4	N. E.	2	30.11	.60	.32
20	78	86	77	73.66		H.	2-4	0	2-4	0	0	S. E.	6	S. W.	6	S.	1	30.07	.64	.41
21	72	89	79	80.00		H.	H.	0	H.	0	0	0	0	S. W.	6	S.	2	30.05	.71	.40
22	72	89	79	80.00		2-4	1-4	0	2-4	1-4	2-4	S.	4	S. W.	8	S. E.	6	30.06	.75	.46
23	70	87	76	77.66		1-4	2-4	0	2-4	1-4	2-4	S.	5	S.	12	S.	2	30.03	.79	.42
24	75	87	83	81.66		2-4	1-4	2-4	2-4	0	4-4	S.	8	S.	12	S.	2	29.95		
25	61	70	60	63.66	1.88	4-4	0	4-4		4-4		N.	8	S.	7	N. E.	4	30.13	.76	.55
26	61	75	63	66.33	.33	4-4		3-4		3-4		S. E.	4	N.	6	S. W.	4	29.99	.76	.44
27	56	77	66	66.33		1-4	0	0	1-4	4-4		N. E.	4	N. E.	6	E.	8	30.01	.88	.51
28	70	73	67	66.66	.31	4-4		3-4	1-4	0	0	S.	8	S. W.	16	W.	8	29.87	.80	.31
29	61	73	61	65.00		1-4	0	1-4	2-4	1-4	0	W.	2	W.	8	N. W.	2	30.14	.84	.80
30	55	67	57	59.66		0	0	0	2-4	1-4	0	N. W.	6	N. W.	10	0	0	30.17	.76	.31

\* The letters "F," "H," and "S," indicate foggy, hazy, and smoky, respectively.

† The barometer-readings here given, and in the succeeding tables, are at the temperature given for the corresponding days, and not, as in the preceding tables, reduced to freezing-point.

DURING THE AUGUSTS, SEPTEMBERS, OCTOBERS, AND NOVEMBERS OF 1872 AND 1873.

*of Conditions during the Absence and the Prevalence of Yellow Fever.*

[longitude 90° 07' west; height above the sea-level, 260 feet.]

1873.																Thermometer.			Amount of cloudiness.						Wind.						Humidity, per cent.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
																			7.35 a.m.		4.35 p.m.		11 p.m.		7.35 a.m.		4.35 p.m.		11 p.m.		Barometer.			7.35 a.m.		4.35 p.m.		11 p.m.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
																			Rain-fall, inches.		Lower.		Upper.		Lower.		Upper.		Lower.		Upper.		Direction.		Velocity.		Direction.		Velocity.		Direction.		Velocity.		Mean.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Sept.	7.35 a. m.	4.35 p. m.	11 p. m.	Mean.	Rain-fall, inches.	Lower.	Upper.	Lower.	Upper.	Lower.	Upper.	Direction.	Velocity.	Direction.	Velocity.	Direction.	Velocity.
1	80	92	81	84.33	1-4	1-4	2-4	1-4	1-4	H.	S. W.	6	S. W.	12	W.	3	29.67
2	78	82	73	77.66	.48	0	1-4	H. 1-4	4-4	0	S. W.	1	N. W.	1	N. W.	7	30.01
3	76	77	76	76.33	.40	2-4	1-4	2-4	1-4	0	1-4	S. W.	8	S. W.	3	S.	29.95
4	76	89	79	81.33	H.	1-4	2-4	1-4	0	2-4	S. W.	6	S. W.	10	S. W.	5	30.12
5	77	86	76	79.66	4-4	2-4	1-4	H. 1-4	1-4	0	S. W.	1	N.	9	N. E.	4	30.17
6	74	84	72	76.66	S.	1-4	0	2-4	H. 1-4	H.	N. E.	3	N. E.	9	N. E.	5	30.20
7	66	65	65	65.50	2-4	4-4	1-4	1-4	0	0	N.	3	N. E.	14	N. E.	3	30.26
8	60	77	65	67.33	0	1-4	S.	0	0	0	N. E.	6	N.	10	N.	4	30.23
9	63	83	73	73.00	0	1-4	1-4	2-4	0	1-4	N. E.	3	N.	10	N. E.	3	30.09
10	69	86	76	77.00	2-4	1-4	2-4	1-4	0	0	S. E.	1	N.	4	0	0	30.07
11	72	86	76	78.00	S.	1-4	1-4	1-4	1-4	0	S.	1	W.	5	0	0	30.05
12	77	83	70	76.66	0	1-4	4-4	4-4	4-4	0	S. W.	2	S. W.	11	N.	13	29.96
13	67	71	58	65.33	10	4-4	1-4	2-4	0	0	N. E.	4	N.	14	N.	7	30.08
14	53	68	58	59.66	S.	0	0	0	0	0	N.	5	N.	8	N.	2	30.14
15	55	76	64	65.00	S.	0	S.	0	0	0	E.	2	W.	2	0	0	30.11
16	65	82	71	72.66	S.	0	S.	1-4	0	0	0	N. W.	2	0	0	0	30.11
17	66	86	75	75.66	S.	1-4	S.	1-4	0	0	0	0	W.	4	S. E.	4	29.99
18	70	85	75	76.66	S.	1-4	1-4	1-4	S.	0	0	0	N. W.	6	0	0	29.91
19	63	69	56	62.66	4-4	S.	1-4	S.	0	0	N.	13	N.	13	N.	5	30.00
20	53	64	58	58.33	1-4	1-4	4-4	4-4	4-4	0	N. E.	4	N. W.	10	N. E.	2	30.09
21	58	73	65	65.33	1-4	2-4	3-4	1-4	4-4	0	N. E.	2	N. W.	9	N. E.	2	30.07
22	65	70	63	66.00	.51	1-4	2-4	4-4	1-4	0	W.	3	N.	11	N. E.	3	30.06
23	60	70	61	63.66	4-4	1-4	1-4	0	0	0	N. E.	8	N. W.	6	N.	2	29.98
24	56	73	68	65.66	F.	2-4	1-4	4-4	4-4	0	S. E.	3	S. E.	6	S.	4	29.86
25	66	79	74	73.00	4-4	1-4	2-4	0	0	0	N.	5	N. W.	6	S.	4	29.93
26	70	87	76	77.66	0	0	1-4	1-4	0	0	S.	7	S. W.	8	S. E.	4	29.99
27	72	78	76	75.33	.82	4-4	4-4	4-4	4-4	0	E.	4	S. E.	2	S. W.	4	30.03
28	72	84	71	75.66	.24	1-4	2-4	4-4	4-4	0	S. E.	2	S.	9	N.	9	29.95
29	71	63	59	64.33	1.18	4-4	4-4	4-4	4-4	0	0	N. W.	13	N. W.	9	30.05	
30	54	66	56	58.66	0	1-4	0	0	0	0	N. E.	8	N.	13	N. E.	7	30.17



Table of Meteorological Conditions observed at Memphis, Tenn., during the August,

Thermometer.				Amount of cloudiness.						Wind.					Humidity per cent.								
				Rain-fall, inches.	7.35 a.m.		4.35 p.m.		11 p.m.		7.35 a.m.		4.35 p.m.		11 p.m.		Barometer.	7.35 a.m.	4.35 p.m.	11 p.m.			
					Lower.	Upper.	Lower.	Upper.	Lower.	Upper.	Direction.	Velocity.	Direction.	Velocity.	Direction.	Velocity.							
1872.	7.35 a.m.	4.35 p.m.	11 p.m.	Mean.																Mean.			
Oct.	7.35 a.m.	4.35 p.m.	11 p.m.	Mean.																Mean.			
1	45	71	61	59.00	1.4	0	0	0	1.4	0	W.	1	N. W.	4	S. W.	2	30.21	.85	.36				
2	56	78	66	66.66	S.	0	0	0	0	0	S.	2	S. W.	5	S.	1	30.14	.74	.42				
3	64	84	73	73.33	0	0	H.	0	0	0	S.	4	S. W.	7	S. W.	3	30.00	.76	.40				
4	67	84	71	74.00	F.	0	0	H.	0	0	S. W.	3	S.	6	S.	4	30.12	.84	.40				
5	65	83	70	72.66	S.	0	0	2.4	1.4	H.	S.	3	S.	7	S.	1	30.62	.73	.42				
6	65	83	63	64.33	1.96	2.4	2.4	4.4	0	0	S.	1	N. W.	4	N.	12	30.05	.73	.94				
7	56	70	58	61.33	1.4	1.4	0	1.4	0	0	N. E.	5	N.	N.	N.	2	30.13	.87	.65				
8	53	72	58	61.00	0	1.4	0	0	1.4	0	N. E.	1	N. E.	7	N.	0	30.13	.79	.34				
9	52	76	63	63.66	S.	0	0	2.4	S.	2.4	N. E.	4	N. W.	4	N. W.	2	30.13	.86	.41				
10	53	58	46	52.33	0	0	S.	0	0	0	W.	16	N.	16	N.	4	30.31	.55	.42				
11	42	59	48	49.66	S.	0	0	0	S.	0	N.	4	N. W.	N.	1	30.29	.66	.43					
12	38	56	53	52.00	S.	0	0	0	0	0	N.	1	S. W.	N. W.	4	30.11	.90	.38					
13	51	67	56	58.00	S.	0	H.	0	0	0	N. W.	2	N. W.	S. W.	7	30.09	.72	.38					
14	42	55	44	47.00	S.	0	H.	0	S.	0	N. W.	2	N. W.	4	N.	2	30.22	.66	.33				
15	43	68	61	57.33	S.	0	4.4	...	0	2.4	S.	12	S.	7	S.	12	30.02	.66	.38				
16	39	70	64	64.33	1.4	2.4	H.	4.4	1.4	2.4	S.	12	S. W.	S.	4	30.12	.64	.61					
17	39	75	63	65.66	2.4	2.4	H.	1.4	S.	0	S.	1	S. W.	4	S. W.	1	30.21	.81	.51				
18	53	71	55	59.66	F.	0	H.	0	S.	0	W.	4	N. W.	0	0	0	30.25	.93	.29				
19	47	71	35	57.66	F.	0	0	0	S.	0	N. W.	1	N.	3	0	0	30.24	.92	.35				
20	49	73	36	59.33	F.	0	0	2.4	0	1.4	0	0	N.	2	0	0	30.14	.85	.31				
21	53	74	65	64.00	.02	S.	4.4	1.4	2.4	4.4	...	E.	3	S.	S. E.	12	30.06	.66	.51				
22	63	64	54	60.33	.77	4.4	...	4.4	...	4.4	...	N. E.	2	N. E.	N.	12	30.14	.94	.94				
23	51	58	51	53.33	.05	4.4	...	4.4	...	1.4	...	N.	2	N.	N. E.	5	30.29	.85	.69				
24	46	63	55	54.66	...	S.	2.4	0	2.4	1.4	0	N.	4	N.	N.	4	30.24	.76	.51				
25	48	61	53	55.00	...	S.	0	0	2.4	S.	0	N. W.	4	N. W.	N. E.	3	30.14	.85	.57				
26	45	67	53	55.00	...	0	0	0	0	0	0	0	N. W.	0	0	0	30.07	1.00	.41				
27	47	70	56	57.66	...	S.	0	0	H.	S.	0	0	S. W.	0	0	0	30.07	.84	.48				
28	49	72	60	60.33	...	S.	0	0	0	1.4	0	N. E.	1	E.	E.	8	30.14	.78	.31				
29	56	66	65	62.33	...	2.4	2.4	4.4	...	2.4	0	S. E.	5	S. E.	S. E.	8	30.09	.51	.45				
30	56	61	49	55.33	.27	4.4	...	0	1.4	S.	0	S.	4	N. E.	8	N. W.	1	30.18	.93	.40			
31	38	61	51	50.00	...	F.	...	0	1.4	S.	0	0	0	N. E.	3	N. W.	0	30.24	1.00	.30			
Nov.																							
1	42	62	52	55.33	...	S.	1.4	2.4	2.4	2.4	0	E.	2	S.	3	S. W.	2	30.14	.82	.62			
2	47	62	50	53.00	...	1.4	H.	0	0	S.	0	W.	6	W.	7	S. W.	2	30.09	.84	.22			
3	41	65	55	53.66	...	S.	H.	0	H.	0	0	N. E.	6	E.	4	S. E.	4	30.13	.65	.35			
4	51	62	64	59.00	...	S.	2.4	4.4	...	4.4	...	S. E.	4	E.	4	S. E.	12	30.00	.65	.51			
5	51	57	47	52.66	.03	4.4	...	4.4	...	4.4	...	S.	4	N. W.	N.	4	30.12	.86	.75				
6	43	47	17	45.66	.21	4.4	...	4.4	...	4.4	...	N.	0	N.	N.	8	30.16	.75	.77				
7	41	57	52	50.00	...	4.4	...	1.4	H.	4.4	...	0	0	S. W.	2	0	0	30.11	.91	.54			
8	47	69	55	54.00	...	4.4	...	1.4	3.4	4.4	...	N. E.	3	N. E.	N. E.	3	30.03	.77	.44				
9	50	65	53	56.00	.01	1.4	0	0	1.4	S.	1.4	N. E.	3	N. E.	4	N.	5	29.92	.51	.48			
10	51	58	56	55.00	...	4.4	...	4.4	...	4.4	...	S. E.	4	S. W.	4	S.	4	30.00	.92	.58			
11	55	65	52	57.33	.35	4.4	...	1.4	3.4	4.4	...	S. W.	3	S. E.	2	N.	6	30.07	.86	.63			
12	43	55	51	49.66	...	1.4	0	0	2.4	4.4	...	N.	4	S. E.	16	E.	12	30.07	.83	.50			
13	51	58	44	51.00	...	4.4	...	0	0	0	0	S.	2	N. W.	10	N. W.	16	29.97	.85	.31			
14	31	39	31	33.66	...	0	H.	0	0	1.4	...	W.	2	N. W.	12	W.	6	30.30	.38	.34			
15	26	36	31	31.00	...	2.4	1.4	0	2.4	0	0	W.	5	W.	14	S. W.	7	30.03	.75	.55			
16	27	34	29	30.00	...	S.	2.4	S.	0	S.	0	W.	0	N. W.	4	N.	2	30.15	.52	.34			
17	27	36	33	30.00	...	S.	1.4	0	2.4	S.	1.4	0	0	W.	3	0	0	30.29	.71	.46			
18	27	10	33	33.33	...	F.	H.	S.	H.	S.	0	S. W.	1	S. W.	S.	3	30.42	.76	.39				
19	33	52	47	44.00	...	S.	2.4	S.	3.4	4.4	...	S.	6	S. W.	7	N.	8	30.17	.51	.29			
20	26	35	29	30.00	...	S.	0	0	1.4	0	1.4	N.	8	N. E.	3	S. E.	6	30.30	.63	.35			
21	29	46	40	38.33	.01	S.	1.4	4.4	...	S.	0	S.	1	S. W.	4	S. W.	4	30.06	.55	.69			
22	31	51	41	42.00	...	S.	0	0	0	0	0	W.	4	S. W.	4	S.	5	30.58	.71	.33			
23	36	57	47	46.66	...	S.	0	H.	1.4	0	0	S.	5	S. E.	12	S. E.	4	30.23	.70	.30			
24	48	65	61	58.00	...	4.4	...	3.4	1.4	4.4	...	S.	7	S.	13	S.	2	30.07	.63	.53			
25	47	40	39	42.00	.90	4.4	...	4.4	...	2.4	...	N. W.	14	N. E.	2	N. E.	8	30.12	1.00	.82			
26	40	48	41	43.00	...	4.4	...	S.	H.	S.	0	N.	3	N. E.	5	0	0	30.17	.64	.56			
27	34	13	31	36.00	...	F.	0	0	0	0	0	N.	3	N. E.	5	N. E.	4	30.43	.61	.21			
28	26	37	31	31.50	...	S.	H.	...	...	S.	H.	N. W.	1	N.	N. W.	8	30.47	.63	...				
29	18	26	23	22.33	...	0	0	0	2.4	S.	H.	N. W.	12	W.	1	N.	3	30.67	.52	.34			
30	20	34	34	29.33	...	S.	1.4	S.	1.4	...	...	S.	2	S.	6	S.	14	30.25	.70	.34			



Septembers, Octobers, and Novembers of the years 1872 and 1873—Continued.

Thermometer.					Amount of cloudiness.						Wind.						Humidity. per cent.					
					Rain-fall, inches.	7.35 a.m.		4.35 p.m.		11 p.m.		7.35 a.m.		4.35 p.m.		11 p.m.		Barometer.				
						Lower.	Upper.	Lower.	Upper.	Lower.	Upper.	Direction.	Velocity.	Direction.	Velocity.	Direction.	Velocity.		Mean.	7.35 a.m.	4.35 p.m.	11 p.m.
Oct.	7.35 a.m.	4.35 p.m.	11 p.m.	Mean.																		
1	53	69	63	61.66	...	0	2-4	3-4	1-4	2-4	2-4	N.	6	N.E.	2	N.	4	30.10	73	56	77	
2	63	53	65	67.00	...	4-4	...	2-4	2-4	0	0	E.	2	N.E.	2	N.E.	2	30.09	77	71	94	
3	62	...	70	66.00	...	0	1-4	1-4	1-4	0	2-4	E.	2	S.W.	5	S.	2	30.03	72	54	79	
4	70	76	66	70.66	...	0	2-4	0	1-4	0	0	S.W.	4	N.W.	10	N.	2	29.94	79	64	81	
5	63	...	63	63.00	...	S.	2-4	...	...	4-4	...	E.	1	N.W.	...	N.	12	29.96	77	...	67	
6	46	56	47	49.66	.04	2-4	1-4	0	1-4	0	0	N.	12	N.	16	N.	5	30.16	69	39	62	
7	42	59	50	50.33	...	0	0	S.	0	0	0	N.	7	N.	6	N.	2	30.13	75	43	64	
8	46	69	56	57.00	...	0	0	S.	1-4	2	0	E.	4	N.W.	4	N.W.	1	30.12	69	42	23	
9	52	68	60	60.00	...	S.	0	S.	0	S.	0	0	N.	0	N.W.	5	S.W.	1	30.12	79	43	76
10	52	76	64	64.00	...	0	0	S.	2-4	2	1-4	E.	2	S.W.	6	S.W.	1	30.11	79	56	83	
11	60	77	65	67.33	...	0	1-4	1-4	2-4	0	0	S.W.	3	N.W.	10	N.	6	30.13	88	60	78	
12	54	66	55	58.33	...	0	0	S.	1-4	0	0	N.W.	7	N.W.	10	N.	1	30.20	73	38	62	
13	46	69	54	56.33	...	F.	0	S.	0	S.	0	E.	2	N.W.	3	W.	18	30.17	61	35	65	
14	46	74	61	60.33	...	S.	0	S.	0	S.	0	E.	1	E.	5	0	0	30.24	69	28	65	
15	57	...	66	61.50	...	0	1-4	1-4	2-4	1-4	0	S.E.	3	S.E.	5	S.W.	1	30.28	75	44	73	
16	67	89	70	72.33	...	1-4	2-4	1-4	2-4	0	0	S.	6	S.	5	S.E.	4	30.26	74	54	70	
17	64	79	72	71.66	...	1-4	2-4	1-4	2-4	4-4	...	S.	3	S.W.	10	S.E.	5	30.05	78	54	66	
18	55	57	52	54.66	1.76	4-4	...	4-4	...	1-4	0	N.W.	16	N.	12	N.	5	30.09	93	75	86	
19	46	56	47	49.66	...	0	1-4	0	1-4	1-4	0	N.	6	N.W.	12	N.	3	30.17	76	34	69	
20	44	55	46	48.33	...	0	0	S.	0	0	0	N.W.	4	N.W.	11	0	0	30.07	85	33	76	
21	40	63	56	53.00	...	S.	0	S.	0	0	0	W.	1	S.W.	6	S.	6	29.91	73	42	62	
22	58	68	57	61.00	1.12	1-4	2-4	4-4	...	4-4	...	S.	2	S.	8	N.W.	10	29.92	81	84	87	
23	40	40	36	38.66	1.09	4-4	...	4-4	...	0	0	N.	2	N.	10	N.	5	30.23	91	82	90	
24	38	55	47	46.66	...	4-4	...	S.	2-4	2-4	0	N.	5	N.	5	N.E.	2	30.29	79	62	77	
25	46	52	52	50.00	...	4-4	...	4-4	...	4-4	...	N.E.	1	N.E.	4	E.	3	30.23	92	86	93	
26	57	65	...	61.00	1.04	4-4	...	4-4	...	...	...	S.	12	S.W.	...	...	...	29.85	1.00	94	...	
27	38	56	50	48.00	...	4-4	...	S.	1-4	2-4	0	W.	4	S.W.	11	N.W.	16	29.97	81	39	58	
28	32	41	34	35.66	...	0	0	0	1-4	0	0	W.	8	W.	8	N.W.	2	30.37	89	32	79	
29	30	48	42	40.00	...	0	0	S.	1-4	S.	1-4	0	0	S.W.	3	S.	2	30.35	78	29	50	
30	42	58	46	48.66	...	1-4	2-4	S.	1-4	S.	0	S.W.	8	S.W.	6	S.	2	30.11	57	37	76	
31	36	47	37	40.00	...	0	0	S.	0	S.	0	N.W.	8	N.W.	6	0	0	30.34	55	27	71	
Nov.																						
1*	29	54	47	43.33	...	0	0	S.	1-4	S.	1-4	E.	3	S.E.	5	S.E.	5	30.39	88	26	41	
2	45	59	47	53.66	...	1-4	1-4	4-4	...	4-4	...	S.	3	S.E.	2	N.W.	10	30.24	84	38	84	
3	48	58	49	51.66	...	4-4	...	S.	1-4	S.	1-4	N.E.	4	N.E.	6	N.E.	2	30.24	85	47	63	
4	46	53	52	50.33	.27	4-4	...	4-4	...	4-4	...	N.E.	4	N.E.	4	N.E.	3	30.11	76	93	93	
5	53	61	59	57.66	...	4-4	...	4-4	...	1-4	...	N.	3	N.E.	2	N.E.	1	30.12	93	76	59	
6	52	64	55	57.00	...	4-4	...	3-4	1-4	S.	0	N.	5	N.E.	0	N.E.	1	30.04	72	62	36	
7	50	68	62	60.00	...	S.	1-4	S.	0	2-4	0	N.W.	...	S.W.	...	N.W.	6	29.96	92	51	61	
8	48	65	54	55.33	...	S.	0	S.	0	S.	0	N.W.	2	N.	4	S.W.	4	30.18	48	26	60	
9	46	69	56	57.00	...	S.	0	0	0	S.	0	S.W.	2	W.	2	0	0	30.18	77	27	62	
10	48	74	59	60.33	...	S.	0	S.	0	S.	0	S.W.	1	S.W.	11	S.E.	2	30.03	77	31	59	
11	54	75	60	63.00	...	S.	1-4	S.	0	4-4	...	S.W.	6	W.	11	N.W.	12	29.90	61	22	45	
12	45	46	40	43.66	...	4-4	...	4-4	...	0	0	N.W.	2	W.	8	N.W.	1	30.15	60	33	47	
13	33	49	42	41.33	...	S.	1-4	S.	0	S.	0	W.	1	S.	8	S.	6	30.16	69	24	42	
14	38	57	49	48.00	...	S.	0	S.	0	0	0	S.W.	1	N.W.	1	S.	6	30.13	62	30	50	
15	59	68	64	60.00	...	1-4	2-4	S.	1-4	3-4	0	S.W.	6	S.W.	14	S.W.	8	30.07	85	55	62	
16	62	...	62	62.00	...	4-4	...	...	...	...	...	S.W.	...	...	...	...	...	29.87	77	...	...	
17	60	55	57	57.50	...	...	1-4	...	...	0	11.	...	S.	6	S.W.	3	...	29.38	...	34	50	
18	47	43	34	41.00	...	4-4	...	4-4	...	0	0	N.W.	27	N.W.	16	N.W.	29	29.82	34	43	51	
19	56	36	32	31.33	...	S.	0	S.	11.	0	0	N.W.	4	N.W.	12	W.	1	30.18	63	29	59	
20	29	45	40	38.00	...	H.	H.	H.	...	11.	0	...	4	S.	8	S.	2	30.20	1.00	38	47	
21	45	55	49	49.66	...	F.	...	4-4	...	4-4	...	S.W.	11	S.	6	S.E.	1	30.21	99	62	78	
22	49	52	49	50.00	1.80	4-4	...	4-4	...	4-4	...	S.	2	E.	10	S.E.	7	30.02	92	33	92	
23	53	56	54	54.33	.79	4-4	...	4-4	...	4-4	...	S.E.	5	S.W.	1	N.	9	29.80	93	93	1.00	
24	46	46	43	45.00	...	...	1-4	...	...	0	0	N.W.	2	W.	9	S.W.	9	29.97	92	69	75	
25	45	50	41	46.33	...	S.	0	S.	0	0	0	W.	9	S.W.	10	N.E.	4	29.74	45	38	52	
26	37	59	51	49.00	...	S.	0	4-4	0	1-4	...	S.W.	7	S.	10	N.	6	29.93	71	43	52	
27	44	54	43	47.00	...	S.	0	S.	0	4-4	...	S.W.	1	N.	8	N.E.	10	29.99	75	32	35	
28	42	35	38	38.50	...	...	S.	0	0	1-4	...	...	...	N.E.	6	N.E.	5	30.46	...	34	53	
29	31	45	44	41.00	...	S.	2-4	F.	2-4	0	...	N.E.	5	N.E.	...	N.E.	3	30.43	61	53	82	
30	38	58	57	51.00	...	0	2-4	3-4	2-4	2-4	2-4	E.	3	S.E.	3	S.E.	8	30.37	81	64	81	

\* Frost during nights of October 6-7, and October 31 and November 1.

The foregoing record of the meteorological conditions observed during the period of the prevalence of the epidemic yellow fever at Memphis and Shreveport in 1873, undoubtedly furnish important facts which are essential to a correct study of the habits and climatic conditions under which this disease exists. Yet we are unable to deduce from them, or to recognize any positive factor or factors that can satisfactorily account for the outbreak and the prevalence, for months, of a specific fever which is very generally believed by physicians to have been imported from New Orleans, where, however, it was not recognized as being epidemic or even extensively prevalent during any part of the summer.

We may here remark, that in the study of this disease as seen in the United States, it is to man himself, and his neglect of the laws governing health and the sanitary conditions of his abode, that we must look for at least some of the exciting causes.

That the disease has limits varying its boundaries during particular seasons, will be readily conceded. One of the limiting causes assigned by most observers, is low temperature. We believe that elevation and a comparatively dry atmosphere may be added.

We ask the question if, from the facts furnished by the different visitations of yellow fever within the United States, elevation is entitled to be credited in any degree with controlling the spread of the disease to interior towns; and if so, does the elevation control it in any other mode than by the effect of a cooler and drier atmosphere than prevails in the low lands in the same vicinity?

Nothing is truer than that man's health is affected by his surroundings. Where a rapid vegetable growth and decay go on, as in the tropical and semi-tropical regions, these localities must always have conditions peculiar to themselves, which influence powerfully both health and disease, although their modes of action may escape our observation.

Humboldt long ago observed that this fever did not exist at high altitudes. A. Keith Johnson, in his valuable *Physical Atlas*, says: "At Xalapa, in Mexico, on the same parallel with Vera Cruz, but 4,330 feet above the sea, yellow fever is unknown." In Jamaica, Maroontown and the Phoenix Park, at an elevation of 2,000 feet, are noted for their healthfulness, while yellow fever rages along the coast, cutting off many hundreds annually. In this island, however, it has been known to exist in a mild form on Stony Hill, elevated 1,360 feet.

Major Tullock, of the British army, remarks that this disease has never been known in any climate at an elevation of 2,500 feet. Mount Desmoulin, near Roseau, in the island of Dominica, 1,500 feet above the sea, is always free from fever, even while it is epidemic at the water-line. The same exemption is observed in the northern and elevated parts of San Domingo, whatever may be the character of the soil.

Dr. Drake, in his work, fixes a limit to this fever in the United States at 100 feet. These figures would seem to be not far out of the way.

This view of the limitation to the spread of yellow fever by elevation has been observed in Cuba and elsewhere.

Fort Smith, in Arkansas, 460 feet above the sea, is the highest point at which this fever has prevailed as an epidemic in the United States. Although Winchester, Va., at an altitude of 700 feet, is placed upon the map, the cases reported to have occurred there in 1802 are not well authenticated. A correspondence with Dr. G. Miller, an old and intelligent physician of that place, was opened to verify the report, but nothing could be learned that would give credibility to the statement. As a faithful chronicler, however, we do not feel at liberty to omit the mention of the disease at this place, with the authority, and the less so since a person *en route* from the South died there shortly after his arrival, in 1871, of what was supposed to be yellow fever. There is much room for doubt, also, as to the correctness of the diagnosis that recognized yellow fever at Gallipolis, in Ohio, in 1796, and in Bald Eagle Valley and Nittany, in Pennsylvania, in 1799.

The cases at Cincinnati in 1871 and 1873 were strangers, reported to have been brought there on boats from New Orleans and Memphis, which renders it probable that they were yellow fever, but contracted before sailing. No new cases occurred at Cincinnati. Those reported at Winchester, Gallipolis, Bald Eagle Valley, Nittany, and other points, not here questioned, may have been only aggravated cases of bilious fevers.

But lest we be misled, and attribute too much influence to elevation, we should not forget the remark of the late Dr. La Roche, who notices how securely a stranger may live in the near vicinity of the epidemic, provided he does not enter the infected district. This fact suggests that the stratum of air, in which the infection peculiar to yellow fever exists, is heavier than air free from the poison, and which therefore seeks the lowest and dampest localities.

If this view should be verified by careful and repeated observations, it would suggest that houses and hospitals, in districts particularly liable to yellow fever, should be built upon columns or supports 10 or 12 feet high, with the space beneath paved and left open for the free circulation of air. The occupants might thus, to some extent, escape breathing the heavier and more noxious stratum of air.

It is clear, as shown by this map, that the disease has, in the United States, never in an epidemic form reached an elevation of 500 feet. If elevation, then, can exempt the inhabitants of a place from such a terribly destructive disease, the profession should, and will, avail itself of this means of protecting life, namely, the removal of all susceptible persons out of the infected district to an elevation above 500 feet if practicable. So far as we could collect facts bearing upon the point in question as to each locality we have done so, and they are given in the following table :



TABLE OF LOCALITIES IN THE UNITED STATES WHERE YELLOW FEVER HAS APPEARED SINCE A. D. 1692.

With their Elevations above the Sea-level; Dates of Commencement and Suspension of the Disease; Mortality; and Authorities for the Statements.

State.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Alabama	Blakely, Baldwin Co. ....	On Tensaw River. ....	35	1822					Drake, Principal Diseases of Interior Valley, North America, p. 295.
	Cahawba, Dallas Co. ....	On Alabama River. ....	175	1853					E. H. Barton, Report Sanitary Commission of New Orleans, 1857, p. 65.
	Citronelle, Mobile Co. ....	On Mobile and Ohio Railroad.	65	1853					J. C. Nott, N. O. M. & S. J., 1854, p. 571.
	Dog River Cotton Factory	Five miles from Mobile	30	1853	Aug.				C. Whittleworth, Ch. M. J. N. Rev., 1859, p. 479.
	Demopolis, Marengo Co. ....	On Tombigbee River. ....	125	1853					E. D. Fenner, History of Epidemic Yellow Fever, 1853, p. 49.
	Fort Claiborne, Monroe Co. .	Alabama River. ....	75	1819	July 4	1819	Dec. 1		Harvey E. Brown, asst. surg., U. S. A., Quarantine, on the southern and Gulf coasts, 1872.
	Fort Morgan's Island, ....	Mobile Bay. ....	20	1867	Aug. 13				Brown, Quarantine, p. 14.
	Fort Saint-Stephens, Wash- ington Co. ....	Tombigbee River. ....	75	1819	July 4	1819	Dec. 1		Dowler, Yellow Fever of 1853, p. 16.
	Hollywood. ....	Tombigbee River. ....	75	1853					E. H. Barton, Report Sanitary Commission of New Orleans, 1857, p. 65.
	Mobile, Mobile Co. ....	Mobile Bay. ....	20	1705					P. H. Lewis, N. O. M. J., 1845, vol. 1, No. 4, p. 283.
				1765					Drake, Dis. Int. Valley of N. A., p. 216.
				1766					P. H. Lewis, N. O. M. J., vol. 1, No. 4, 1845, p. 283.
				1819	Aug. 15		Nov. —	274	P. H. Lewis, N. O. M. J., vol. 1, No. 4, 1845, p. 284.
				1821					Drake, Dis. Int. Valley of N. A., p. 191.
				1822					Do.
				1824					Do.
				1825	Sept. —				Drake, Dis. Int. Valley of N. A., p. 219.
			1827	Aug. —				Do.	
			1828					Do.	
			1829	Sept. 14			130	Drake, Dis. Int. Valley of N. A., p. 191.	
			1837	Sept. 30	1837	Nov. —	350	Do.	
			1838					Do.	
			1839	Aug. 11	1839	Oct. 20	650	Drake, Dis. Int. Valley of N. A., p. 191.	
			1841					Drake, and Brown, Quarantine, 1852.	
			1842	Aug. 20			60	J. H. Lewis, N. O. M. J., 1844, p. 31.	
			1843	Aug. 18	1843	Nov. 5	240	Drake, p. 222, and Brown, Quarantine, 1852.	
			1844					Do.	
			1847				76	Drake, Dis. Int. Valley of N. A., p. 191.	
			1848				75	Brown, Quarantine, and Fenner's South Med. Re- ports, vol. 2, p. 304.	
								Fenner, South Med. Reports, vol. 2, p. 304.	



Table of Localities in the United States where Yellow Fever has appeared since A. D. 1668, &amp;c.—Continued.

State.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Florida . . . . .	Milton, Santa Rosa Co. . . . . Pensacola Bay. Pensacola, Escambia Co. . . . . On Pensacola Bay.	On Blackwater River, near Pensacola Bay. On Pensacola Bay.	20 15	1829	June	—	—	26	C. C. Dupré, <i>Am. J. of Med. Sci.</i> , 1841, p. 380.
				1841	Aug.	—	—	112	<i>Do.</i>
				1853	Aug.	—	—	—	Army Medical Statistics, p. 323.
				1854	—	—	—	—	Ed. N. O. M. & S. J., 1854, p. 423.
				1862	June 20	—	—	71	Ed. M. and S. Reporter, 1862, p. 513.
				1864	—	—	—	—	E. B. Hunt, <i>Med. Reporter</i> , 1864, p. 340.
				1865	—	—	—	—	Brown, <i>Quarantine</i> , p. 40.
				1867	—	—	—	—	Surgeon-General's Office, Circular No. 1, 1868, p. 152.
				1869	—	—	—	—	Brown, <i>Quarantine</i> , p. 41.
				1873	—	—	—	—	<i>Do.</i>
				1875	—	—	—	—	<i>Do.</i>
				1881	—	—	—	—	P. S. Townsend, N. Y. M., and Ph. J., 1883, p. 315.
				1882	Aug. 12	—	—	125	Drake, <i>Dis. Int. Valley of N. A.</i> , p. 190.
				1885	—	—	—	—	<i>Do.</i>
				1892	Aug. 12	—	—	257	Drake, <i>Dis. Int. Valley of N. A.</i> , p. 220.
				1895	—	—	—	—	Brown, <i>Quarantine</i> , p. 36.
				1897	—	—	—	—	Med. Statistics, United States Army, p. 58.
				1894	Aug. 23	—	—	—	Drake, <i>Dis. Int. Valley of N. A.</i> , p. 232.
				1899	—	—	—	—	Drake, <i>Dis. Int. Valley of N. A.</i> , p. 233.
				1841	—	—	—	—	<i>Do.</i>
				1842	—	—	—	—	S. C. Lauranson, Maryland M. & S. J., 1843, p. 393.
				1843	—	—	—	—	Dr. Wedderburn, <i>Report of San. Com.</i> , p. 125.
				1844	—	—	—	—	<i>Do.</i>
				1845	—	—	—	—	<i>Do.</i>
				1846	—	—	—	—	Brown, <i>Quarantine</i> , p. 36.
				1847	—	—	—	—	<i>Do.</i>
				1848	—	—	—	—	Dr. Wedderburn, <i>Report of San. Com.</i> , p. 125.
				1854	July 9	—	—	—	Dr. Wedderburn, <i>Report of San. Com.</i> , of N. O., p. 125.
1851	—	—	—	—	E. D. Fenner, <i>Hist. of Yellow Fever</i> , N. O., 1853, p. 49.				
1858	—	—	—	—	R. B. S. Hartsis, N. O. M. N., 1859, p. 727.				
1863	Aug. 25	—	—	—	<i>Do.</i>				
1867	July 24	—	—	34	B. E. Gibbs, A. J. M. Sc., 1866, p. 340.				
1873	Aug. 6	—	—	61	M. Reporter, 1868, p. 297.				
1897	—	—	—	—	R. F. Michel, Charleston M. J. and R., 1874, vol. 1, No. 4, p. 280.				
1891	Aug.	—	—	140	Brown, <i>Quarantine</i> , p. 32.				
1898	—	—	—	—	J. Graham, M. Reporter, 1896, p. 564.				
1899	Aug. 15	—	—	—	C. C. Dupré, A. J. Med. Sci., 1841, p. 384.				
					<i>Do.</i>				



Georgia	Saint Joseph's, Calhoun Co.	On Saint Joseph's Bay, near Gulf of Mexico.	15	1841	1841	.....	.....	.....	26	Do. B. M. and S. J., 1841, p. 17.
	Suwanee, Columbia Co.	On Suwanee River.	50	1856	1856	.....	.....	.....	.....	T. Lawson, Surg. Gen. Report, 1840, p. 308.
	Tampa, Hillsborough Co.	Head of Tampa Bay, forty miles from the Gulf of Mexico.	20	1871	1871	.....	.....	.....	.....	Med. and Surg. Reporter, No. 17, p. 377, vol. 25.
	Tortugas	Gulf of Mexico.	12	1853	1853	Sept. —	.....	.....	.....	Drake, Dis. Int. Valley of N. A., p. 191.
	Pensacola	Pensacola Bay.	.....	1862	1862	Sept. —	.....	.....	4	Army Medical Statistics, p. 323.
			.....	1867	1867	July 4	.....	.....	38	Circular No. 1, Surgeon General's Office, 1869.
			.....	1873	1873	Aug. 14	.....	Nov. 19	62	Brown, Quarantine, p. 46.
	Augusta, Richmond Co.	On Savannah River.	185	1889	1889	.....	.....	.....	.....	John M. Woodworth, Supervising Surgeon, U. S. Marine-Hospital Service, Report 1873.
	Rainbridge, Decatur Co.	On Flint River.	120	1854	1854	.....	.....	.....	.....	B. M. and S. J., 1839, p. 86.
	Saint Mary's, Camden Co.	On Saint Mary's River, nine miles from the sea.	15	1808	1808	Sept. 5	.....	Oct. —	84	Ed. Nash, J. M. and S., 1854, p. 345.
	Savannah, Chatham Co.	On Savannah River, eighteen miles from its mouth.	30	1807	1807	.....	.....	.....	.....	Washington Republican, Oct. 25, 1873, p. 1.
			.....	1808	1808	.....	.....	.....	.....	J. Seagrave, M. Rep., 1810, p. 135.
			.....	1819	1819	.....	.....	.....	.....	Do.
			.....	1820	1820	.....	.....	.....	.....	Dowler, Tableau of Yellow Fever, p. 14.
			.....	1827	1827	.....	.....	.....	.....	Do.
			.....	1832	1832	.....	.....	.....	.....	A. M. Rec., 1820, p. 212.
			.....	1833	1833	.....	.....	.....	.....	N. A. M. and S. J., 1827, p. 1.
			.....	1834	1834	Aug. 5	.....	.....	.....	N. A. M. and S. J., vol. 10, p. 145.
			.....	1854	1854	.....	.....	.....	.....	R. C. Mackall, Ch. M. J. and Rev., 1855, p. 150.
			.....	1857	1857	.....	.....	.....	.....	Do.
			.....	1873	1873	Sept. 1	.....	Sept. 25	17	Hume, Charleston M. J., vol. 10, p. 31.
Illinois	Cairo	At junction of Ohio and Mississippi Rivers.	322	1873	1873	Sept. 22	.....	Oct. 15	5	H. Wardner, Report Supervising Surgeon U. S. Marine-Hospital Service, 1873.
Louisiana	Louisville	On the Ohio River.	450	1819	1819	.....	.....	.....	.....	P. H. Bailhache, <i>ibid.</i>
	Alexandria, Rapides Parish	On Red River.	75	1822	1822	.....	.....	.....	.....	G. S. D. Anderson, N. O. M. J., 1859, p. 508.
			.....	1831	1831	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1840	1840	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1853	1853	.....	.....	.....	.....	Do.
			.....	1854	1854	.....	.....	.....	.....	Do.
			.....	1855	1855	Sept. 13	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	E. D. Fenner, N. O. M. and S. J., 1848, p. 192.
			.....	1853	1853	.....	.....	.....	.....	P. C. Gaillard, Ch. M. J. and Rev., 1859, p. 481.
			.....	1856	1856	.....	.....	.....	.....	N. O. M. J., 1859, p. 506.
			.....	1823	1823	.....	.....	.....	.....	Do.
			.....	1817	1817	.....	.....	.....	.....	Do.
			.....	1819	1819	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1827	1827	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	Oct. —	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
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			.....	1843	1843	.....	.....	.....	.....	Do.
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			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
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			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837	.....	.....	.....	.....	Do.
			.....	1847	1847	.....	.....	.....	.....	Do.
			.....	1856	1856	.....	.....	.....	.....	Do.
			.....	1822	1822	.....	.....	.....	.....	Do.
			.....	1839	1839	.....	.....	.....	.....	Do.
			.....	1843	1843	.....	.....	.....	.....	Do.
			.....	1837	1837					

Table of Localities in the United States where Yellow Fever has appeared since A. D. 1658, &amp;c.—Continued.

Name.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COMMENCEMENT.		DATE OF SUSPENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Louisiana.....	Bay of Saint Louis.....	Mouth of the Mississippi River.	10	1820	Aug.	—	.....	.....	A. P. Merrill, N. O. M. and S. J., 1851, p. 1.
	Bayou Sara, West Feliciana Parish.	On Mississippi River.....	75	1830	.....	.....	.....	.....	N. O. M. and S. J., 1850, p. 79.
	Burat Settlement, (coast below New Orleans)	On Mississippi River.....	10	1847	.....	.....	.....	.....	E. D. Fenner, N. O. M. and S. J., 1848, p. 19.
	Carrollton, Jefferson Parish.	On Mississippi River.....	15	1853	Sept. 22	.....	.....	.....	P. C. Gaillard, Ch. M. J. and Rev., 1859, p. 481.
	Centreville, Saint Mary's Parish.	On Mississippi River.....	20	1854	.....	.....	.....	.....	Brown, Quarantine.
	Clinton, East Feliciana Parish.	On Teche River, 60 miles from the Gulf of Mexico.	85	1847	May 18	.....	.....	1	E. D. Fenner, N. O. M. and S. J., 1848, p. 192.
	Cloutierville, Natchitoches Parish.	32 miles N. of Baton Rouge.	20	1855	Sept. 18	.....	Nov. 18	1	D. Warren Bickell, N. O. M. N., 1855, p. 167.
	Covington, Saint Tammany Parish.	On Old River, branch of Red River.	175	1853	Sept. 1	.....	Dec. 1	75	W. B. Wood, N. O. M. N., 1856, p. 483.
	Donaldsonville, Ascension Parish.	45 miles north of New Orleans.	25	1854	.....	.....	.....	.....	Do.
	Franklin, Saint Mary's Parish.	On Mississippi River.....	30	1857	Aug. 14	.....	Dec. 14	.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 28.
	Gretna.....	On Teche River, 65 miles from the Gulf of Mexico.	15	1830	.....	.....	.....	.....	Brown, Quarantine.
	Iberville, Iberville Parish.	On Mississippi River.....	18	1853	Oct. 19	.....	Nov. 24	30	E. D. Fenner, N. O. M. and S. J., 1848, p. 192.
	Jeanerret's, Parish of Saint Mary.	Settlement on coast below New Orleans.	15	1854	Oct. 7	.....	.....	.....	Do.
	Jeanit's Bend.....	Near New Orleans.....	10	1854	Sept. 12	.....	.....	.....	E. D. Fenner, N. O. M. and S. J., 1848, p. 192.
	La Fayette.....	On Mississippi River.....	12	1847	June 22	.....	.....	.....	Do.
	Lake Providence, Carroll Parish.	On Lake Pontchartrain.....	100	1853	.....	.....	.....	.....	Drake, Dis. Int. Valley of N. A., p. 247.
	Mandeville, Saint Tammany Parish.	On Red River.....	15	1847	.....	.....	.....	.....	J. W. Layman, N. O. M. and S. J., 1854, p. 670.
	McDonoughville.....	Southern part of Louisiana.	20	1858	.....	.....	.....	.....	W. B. Wood, N. O. M. N., 1856, p. 483.
	Natchitoches.....	.....	.....	.....	.....	.....	.....	.....	N. O. M. J., 1859, p. 506.
	New Iberia, Saint Martin's Parish.	.....	.....	.....	.....	.....	.....	.....	Brown, Quarantine.
	.....	.....	.....	.....	.....	.....	.....	.....	Brown, Quarantine.
	.....	.....	.....	.....	.....	.....	.....	.....	Brown, Quarantine.
	.....	.....	.....	.....	.....	.....	.....	.....	N. O. M. and S. J., 1848, p. 536.
	.....	.....	.....	.....	.....	.....	.....	.....	J. L. Riddell, N. O. M. and S. J., 1854, p. 813.
	.....	.....	.....	.....	.....	.....	.....	.....	E. D. Fenner, N. O. M. and S. J., p. 192.
	.....	.....	.....	.....	.....	.....	.....	.....	N. O. M. J., 1859, p. 506.
	.....	.....	.....	.....	.....	.....	.....	.....	Drake, Dis. Int. Valley of N. A., p. 191.
	.....	.....	.....	.....	.....	.....	.....	.....	Drake, Dis. Int. Valley of N. A., p. 241.
	.....	.....	.....	.....	.....	.....	.....	.....	Report New Orleans Board of Health, 1872, p. 65.
	.....	.....	.....	.....	.....	.....	.....	.....	Brown, Quarantine, p. 58.

New Orleans.....	On Mississippi River.....	10	1769	.....	.....	.....	.....	.....	S. Chaillé, Va. M. J., 1858, p. 498.
			1791	.....	.....	.....	.....	.....	Do.
			1793	.....	.....	.....	.....	.....	Trans. A. M. A., vol. 2, p. 684.
			1794	.....	.....	.....	.....	.....	Stethoscope, vol. 3, No. 11, 1853, p. 665.
			1795	.....	.....	.....	.....	.....	Do.
			1796	.....	.....	.....	.....	.....	Do.
			1797	.....	.....	.....	.....	.....	Do.
			1799	.....	.....	.....	.....	.....	Do.
			1800	.....	.....	.....	.....	.....	Do.
			1801	.....	.....	.....	.....	.....	S. Chaillé, Va. M. J., 1858, p. 498.
			1802	.....	.....	.....	.....	.....	Do.
			1804	.....	.....	.....	.....	.....	Dowler, Tableau of Yellow Fever, 1853, p. 12.
			1809	.....	.....	.....	.....	.....	Chaillé, Va. M. J., 1858, p. 498.
			1811	.....	.....	.....	.....	.....	Do.
			1812	.....	.....	.....	.....	.....	Do.
			1817	.....	.....	.....	.....	.....	Do.
			1818	.....	June 18	.....	.....	.....	S. Chaillé, Va. Med. J., 1858, p. 498.
			1819	.....	July 1	.....	.....	.....	M. M. Dowler, N. O. M. N., 1859, p. 303.
			1820	.....	Sept. 1	.....	.....	.....	S. Chaillé, Va. Med. J., 1858, p. 498.
			1822	.....	Aug. 23	.....	.....	.....	Do.
			1823	.....	Aug. 4	.....	.....	.....	Trans. A. M. A., 1851, p. 207, and Drake, p. 197.
			1824	.....	May 18	.....	.....	.....	Do.
			1825	.....	May 19	.....	.....	.....	Do.
			1826	.....	July 19	.....	.....	.....	Do.
			1827	.....	July 19	.....	.....	.....	Do.
			1828	.....	June 18	.....	.....	.....	Do.
			1830	.....	May 23	.....	.....	.....	Do.
			1831	.....	July 15	.....	.....	.....	Do.
			1831	.....	June 9	.....	.....	.....	Do.
			1832	.....	Aug. 15	.....	.....	.....	Do.
			1833	.....	July 12	.....	.....	.....	Do.
			1834	.....	Aug. 28	.....	.....	.....	Do.
			1835	.....	Aug. 23	.....	.....	.....	Do.
			1836	.....	Aug. 24	.....	.....	.....	Do.
			1837	.....	July 24	.....	.....	.....	Do.
			1838	.....	Aug. 25	.....	.....	.....	Do.
			1839	.....	July 23	.....	.....	.....	Do.
			1840	.....	July 25	.....	.....	.....	Do.
			1841	.....	July 27	.....	.....	.....	Do.
			1842	.....	July 30	.....	.....	.....	Do.
			1843	.....	July 5	.....	.....	.....	Do.
			1844	.....	July —	.....	.....	.....	Do.
			1845	.....	Aug. —	.....	.....	.....	Do.
			1846	.....	Aug. —	.....	.....	.....	Chaillé Va. Med. J., 1856, p. 499.
			1847	.....	Aug. —	.....	.....	.....	Do.
			1848	.....	June —	.....	.....	.....	Do.
			1849	.....	Aug. —	.....	.....	.....	Do.
			1850	.....	July —	.....	.....	.....	Do.
			1851	.....	July —	.....	.....	.....	Do.
			1852	.....	July —	.....	.....	.....	Do.
			1853	.....	May —	.....	.....	.....	Do.
			1854	.....	July —	.....	.....	.....	Do.



Table of Localities in the United States where Yellow Fever has appeared since A. D. 1663, &amp;c.—Continued.

e.	Locality.	Situation.	Elevation, in feet above sea-level.	DATE OF COMMENCEMENT.		DATE OF SUSPENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Louisiana.....	New Orleans.....	On Mississippi River.....	10	1855	June —	.....	Dec. —	2, 670	Chaillé, Va. Med. J., 1856, p. 499.
				1856	Aug. —	.....	Nov. —	74	S. Chaillé, Va. M. J., 1856, p. 499.
				1857	June —	.....	Dec. —	199	Do.
				1858	June —	.....	Oct. 10	3, 889	Ed. Med. Rep., 1858, vol. 1, No. 4, p. 72.
				1862	.....	.....	.....	.....	Fenner, S. J. of M. S., May, 1866.
				1863	.....	.....	.....	.....	Chaillé, p. 8.
				1864	.....	.....	.....	.....	Harris, Sanitary Commission, p. 264.
				1867	June 10	.....	Dec. 22	3, 093	Ed. N. O. M. J., 1868, p. 194.
				1870	May 16	.....	Dec. —	387	J. C. Fuget, N. O. Med. & S. J., vol. 1, No. 2, 1873.
				1871	Aug. 4	.....	Oct. —	55	Report N. O. Board of Health, 1871.
				1872	Aug. 28	.....	Nov. 30	40	Report N. O. Board of Health, 1872, p. 17.
				1873	July 4	.....	Nov. 18	225	Ossannus Smith, Report Supervising Surgeon, U. S. Marine Hospital Service, 1873.
	New Orleans, (small settlement on coast below.) Opelousas, Saint Landry Parish.	On Mississippi River..... Seven miles from the head of navigation on the Courtaubieu Bayou.	10 60	1854	.....	.....	.....	.....	D. K. Fox, N. O. M. N., 1855, p. 409.
				1855	.....	.....	.....	.....	Do.
				1857	.....	.....	.....	.....	Carpenter, Sketches, p. 26.
				1859	Oct. 20	.....	Nov. —	.....	T. A. Cooke, N. O. M. J., 1846, p. 27; Drake, p. 243.
				1839	Aug. —	.....	Nov. —	.....	Do.
				1842	.....	.....	.....	.....	Do.
				1853	.....	.....	.....	.....	T. A. Cooke, South Med. Rec., vol. 34, 1873, No. 4, p. 199.
				1867	.....	.....	.....	.....	Do.
				1863	Aug. 8	.....	Dec. —	45	J. S. Grant, M. D., Report San. Com., 1853, p. 43.
				1854	Sept. —	.....	.....	.....	W. B. Wood, N. O. M. N., 1856, p. 483.
				1855	Sept. —	.....	.....	.....	Do.
				1837	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 191.
	Pattersonville, Saint Mary's Parish.	On Teche River.....	20	1867	.....	.....	.....	.....	Do.
				1853	Aug. 8	.....	Dec. —	.....	J. S. Grant, M. D., Report San. Com., 1853, p. 43.
				1854	Sept. —	.....	.....	.....	W. B. Wood, N. O. M. N., 1856, p. 483.
				1855	Sept. —	.....	.....	.....	Do.
				1837	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 191.
				1839	.....	.....	.....	.....	Do.
				1847	.....	.....	.....	.....	N. O. M. and S. J., 1848, p. 536.
				1853	Sept. —	.....	Oct. —	.....	J. B. Hacker, N. O. M. and S. J., 1854, p. 608.
				1858	.....	.....	.....	.....	S. Chaillé, Va. M. J., 1858, p. 491.
				1854	Oct. —	.....	.....	.....	Brown, Quarantine.
				1870	.....	.....	.....	.....	T. A. Cooke, South Med. Rec., vol. 3, 1873, No. 4, p. 193.
	Point a la Hache, coast below New Orleans.	On Mississippi River.....	8	1841	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 252.
				1843	Oct. 13	.....	.....	.....	Do.
				1839	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 191.
				1811	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 253.
				1817	.....	.....	.....	.....	Do.
	Port Hudson, East Feliciana Parish.	On Mississippi River.....	75	1841	.....	.....	.....	.....	Do.
				1843	Oct. 13	.....	.....	.....	Do.
				1839	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 191.
				1811	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 253.
				1817	.....	.....	.....	.....	Do.
				1841	.....	.....	.....	.....	Do.
				1843	Oct. 13	.....	.....	.....	Do.
				1839	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 191.
				1811	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., p. 253.
				1817	.....	.....	.....	.....	Do.
				1841	.....	.....	.....	.....	Do.
				1843	Oct. 13	.....	.....	.....	Do.

Maryland	Saint John Baptiste .....	1849	.....	.....	.....	Do.
	Saint Martinsville, Saint Martin's Parish.	1853	.....	.....	.....	Do.
	Saint Mary's Parish, (Judge Baker's plantation.)	1857	Sept. 22	.....	.....	Do.
	Shreveport, Caddo Parish	1839	Aug. 28	.....	.....	Do.
		1843	Aug. 28	.....	.....	Do.
		1830	.....	.....	1	P. B. McKelvey, N. O. M. and S. J., 1849, p. 64.
		1843	.....	.....	.....	Do.
		1846	.....	.....	1	Do.
		1848	.....	.....	1	Do.
	On Mississippi River .....	1853	.....	.....	.....	Do.
	On Teche River .....	1853	.....	.....	.....	Do.
	On the Gulf of Mexico .....	1839	.....	.....	.....	Do.
	On Red River .....	1854	Sept. —	Oct. —	.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 26.
		1853	Sept. —	Dec. —	.....	John M. Woodworth, Supervising Surgeon U. S.
	On Bayou la Fourche .....	1853	Aug. 12	Nov. 10	759	M. H. S., Report 1873.
		1854	.....	.....	160	B. Dowler, Tableau of Yellow Fever, 1853, p. 26.
	On Washita River .....	1853	Sept. 20	Oct. —	.....	M. A. McLeod, N. O. M. N., 1855, p. 454.
	On Mississippi River .....	1853	Sept. 12	Oct. —	.....	W. A. Booth, N. O. M. and S. J., 1849, p. 65.
	On Teche Bayou .....	1853	Aug. —	.....	.....	T. P. Richardson, Report San. Com., p. 42.
	Head of navigation on the Courtaubau Bayou.	1870	.....	.....	.....	H. B. Seaw, Report San. Com., p. 57.
Baltimore, Baltimore Co ..		1837	.....	.....	.....	T. A. Cooke, South Med. Rec., vol. 3, No. 4, p. 197.
		1839	.....	.....	.....	T. A. Cooke, South Med. Rec., vol. 3, No. 4, p. 199.
		1852	.....	.....	.....	Do.
		1853	Aug. 15	.....	.....	Do.
		1854	.....	.....	.....	T. A. Cooke, N. O. M. and S. J., 1854, p. 602.
		1867	.....	.....	.....	T. A. Cooke, South Med. Rec., vol. 3, No. 4, p. 196.
		1894	.....	.....	.....	Do.
		1795	.....	.....	.....	W. Hume, Ch. M. J. and Rev. 1860, p. 24.
		1797	Aug. —	Nov. —	.....	J. H. Griscom, Visitations of Yellow Fever, p. 8.
		1799	.....	.....	.....	W. Hume, Ch. M. J. and Rev. 1860, p. 24.
		1800	.....	.....	.....	Do.
		1801	.....	.....	.....	Do.
		1802	.....	.....	.....	M. Repps, 1803, p. 100.
		1805	.....	.....	.....	J. H. Griscom, Visitations of Yellow Fever, p. 13.
		1819	July 21	Oct. 30	.....	D. M. Reese, Yellow Fever, 1819, p. 27.
		1820	.....	.....	.....	H. G. Jameson, A. J. M. C., 1856, p. 372.
		1821	.....	.....	.....	Do.
		1822	.....	.....	.....	Do.
		1868	.....	.....	.....	Brown, Quarantine, p. 14.
Massachusetts	Near Chesapeake Bay .....	15	.....	.....	.....	Stewart, Med. Mus., 1805, p. 362.
	Head of Massachusetts Bay .....	1691	.....	.....	.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 7.
		1693	.....	.....	.....	Ed. N. Y. J. M., 1856, p. 278.
		1795	.....	.....	.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 7.
		1796	Aug. —	.....	.....	J. H. Griscom, N. Y. J. M., 1856, p. 369.
		1796	.....	.....	.....	.....

Table of Localities in the United States where Yellow Fever has appeared since A. D. 1638, &c.—Continued.

State.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Massachusetts.	Boston, Suffolk Co.	Head of Massachusetts Bay.	45	1798	.....	.....	.....	200	J. H. Griscom, N. Y. J. M., 1856, p. 369.
				1800	.....	.....	.....	.....	S. Enlen, N. A. M. and S. J., 1858, p. 321.
				1802	.....	.....	.....	60	J. G. Graham, Med. Rep., 1856, p. 563.
				1805	.....	.....	.....	.....	J. H. Griscom, Visitation of Yellow Fever, p. 13.
				1819	.....	.....	.....	.....	S. Enlen, N. A. M. and S. J., 1858, p. 321.
Mississippi.	Holliston, Middlesex Co.	Inland, 25 miles from Boston	75	1741	.....	.....	.....	15	F. E. Oliver, B. M. and S. J., 1858, p. 140.
	Nantucket, Nantucket Co.	On an island in the ocean	90	1763	.....	.....	.....	239	Med. Rep., 1853, p. 107.
	New Bedford, Bristol Co.	On Buzzard's Bay	25	1801	.....	.....	.....	.....	Brown, Quantino, p. 9.
	Newburyport, Essex Co.	On Merrimac River	20	1796	.....	.....	.....	.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 11.
	Salem, Essex Co.	On an inlet of the sea	20	1788	.....	.....	.....	.....	J. H. Griscom, N. Y. J. M., 1856, p. 369.
	Biloxi, Harrison Co.	On Biloxi Bay	10	1702	.....	.....	.....	.....	J. G. Graham, Jr., Med. Rep., 1856, p. 563.
				1839	.....	.....	.....	.....	Drake Dis. Int. Valley, N. A., 191.
				1847	.....	.....	.....	.....	Do.
				1853	.....	.....	.....	.....	E. D. Jenner, N. O. M. and S. J., 1848, p. 192.
				1858	.....	.....	.....	.....	J. C. Nutt, N. O. M. and S. J., 1854, p. 571.
	Brandon, Rankin Co.	Inland, 12 miles from Jackson, on branch of Pearl River.	300	1853	Sept. 15	.....	.....	.....	S. Chaille, Va. M. J., 1858, p. 401.
				1854	Sept. 23	Nov. 18	.....	.....	Report Sanitary Commission, 1853, p. 77.
	Canton, Madison Co.	Inland 25 miles from Jackson, near branch of Pearl River.	320	1855	.....	.....	.....	.....	Trans. A. M. A., 22, p. 201.
	Clifton, Jefferson Co.	Cooper's Wells, Hinds Co.	175	1853	Aug. 28	Oct. —	.....	.....	A. P. Jones, N. O. M. N., 1856, p. 182.
	Grand Gulf, Claiborne Co.	On Mississippi River	275	1855	Aug. 23	.....	.....	13	J. S. Beazley, N. O. M. N., 1856, p. 151.
	Greenwood, Carroll Co.	On Yazoo River	140	1853	.....	.....	.....	.....	E. McAllister, N. O. M. and S. J., 1854, p. 675.
	Jackson, Hinds Co.	On Pearl River	275	1853	.....	.....	.....	9	Trans. A. M. A., 1854, p. 325.
				1854	.....	.....	.....	.....	S. C. Faras, Stethoscope, 1855, p. 584.
	Natchez, Adams Co.	On Mississippi River	160	1817	Sept. —	Nov. 9	.....	.....	Do.
				1819	Sept. —	.....	.....	.....	Drake, Dis. Int. Valley, N. A., p. 263.
				1823	Aug. 10	Dec. —	.....	140	Brown, Quantino, p. 39.
				1825	Aug. 20	Oct. 18	.....	.....	IL Tooley, History Yellow Fever, 1823, p. 25.
				1827	Sept. 1	Nov. 1	.....	150	Drake, Dis. Int. Valley, N. A., p. 269.
				1829	Sept. 8	Nov. —	.....	.....	A. P. Merrill, Galt, M. J., 1867, p. 801.
				1837	Sept. —	Nov. 25	.....	.....	Drake, Dis. Int. Valley, N. A., p. 191.
				1839	Sept. —	Nov. —	.....	235	Do.
				1844	June —	Nov. —	.....	.....	Do.
				1848	July 17	.....	.....	.....	Cartwright, N. O. M. and S. J., 1848, p. 225.
				1853	.....	.....	.....	.....	C. H. Sabine, N. O. M. and S. J., 1859, p. 549.
								.....	B. Dowler, Tableau of Yellow Fever, 1853, p. 26.



Pascagoula, Jackson Co. . . . .	On Pascagoula Bay . . . . .	1855 1857	10	1847	1853	1857	1855	1857	B. M. and S. J., 1855, p. 275. S. Chaillé, Va. M. J., 1856, p. 491.
Pass Christian, Harrison Co. . . . .	Near Saint Louis Bay . . . . .	1853	15	1847	1853	1857	1853	1857	E. D. Fenner, N. O. M. and S. J., 1856, p. 192. J. C. Nott, N. O. M. and S. J., 1854, p. 571. E. D. Fenner, N. O. M. and S. J., 1856, p. 192.
Petit Gulf Hills, Jefferson Co. . . . .	On Mississippi River . . . . .	1853	200	1853	1853	1857	1853	1857	J. C. Nott, N. O. M. and S. J., 1854, p. 571. W. H. Calvert, N. O. M. and S. J., 1856, p. 80.
Port Gibson, Claiborne Co. . . . .	On Bayou Pierre . . . . .	1853	200	1853	1853	1857	1853	1857	S. Chaillé, Va. M. J., 1856, p. 491.
Rodney, Jefferson Co. . . . .	On Mississippi River . . . . .	1853	175	1847	1853	1857	1853	1857	A. P. Jones, N. O. M. N., 1854, p. 180.
Shieldsborough, Hancock Co. . . . .	On Saint Louis Bay . . . . .	1853	10	1847	1853	1857	1853	1857	E. McAllister, N. O. M. and S. J., 1854, p. 676. A. P. Jones, N. O. M. N., 1854, p. 180.
Vicksburg, Warren Co. . . . .	On Mississippi River . . . . .	1853	175	1847	1853	1857	1853	1857	C. B. New, West Lane, 1844, p. 301. A. P. Jones, N. O. M. N., 1854, p. 180. Do. Do. Do.
Washington, Adams Co. . . . .	Inland, near Natchez . . . . .	1853	175	1847	1853	1857	1853	1857	Drake, Dis. Int. Valley N. A., p. 214.
Whitell's Landing . . . . .	Twenty miles below Natchez . . . . .	1853	135	1847	1853	1857	1853	1857	A. L. C. Magruder, N. O. M. J., 1848, p. 689. Ed. West Lancer, 1853, p. 575.
Woodville, Wilkinson Co. . . . .	Fifteen miles east of the Mississippi River . . . . .	1853	100	1844	1853	1857	1853	1857	Drake, Dis. Int. Valley N. A., p. 191. S. Chaillé, Va. M. J., 1856, p. 491. Med. and Surg. Rep., vol. 25, No. 16, p. 354. J. W. Monnett, A. J. M. Sc., 1857, p. 243.
Yazoo City, Yazoo Co. . . . .	On Yazoo River . . . . .	1853	140	1847	1853	1857	1853	1857	Drake, Dis. Int. Valley of N. A., p. 190. J. W. H. West, Lancer, 1844, p. 347. P. C. Gaillard, Ch. M. J. and Rev., 1859, p. 480. A. C. Holt, N. O. M. N., 1856, p. 194.
Saint Louis, Saint Louis Co. . . . .	On Mississippi River . . . . .	1853	475	1847	1853	1857	1853	1857	Do. S. Chaillé, Va. M. J., p. 491. Traus, A. M. A., 1854, p. 523.
New Design, Saint Louis Co. . . . .	Twenty miles below Saint Louis . . . . .	1853	420	1797	1853	1857	1853	1857	Ed. Nash, J. M. and S., 1854, p. 345. W. Webb, N. O. M. N., 1856, p. 32.
Portsmouth, Rockingham Co. . . . .	On Piscataqua River, three miles from the ocean . . . . .	1853	40	1798	1853	1857	1853	1857	Dr. Watkins, M. Repos., 1801, p. 74.
Bridgeton, Cumberland Co. . . . .	On Cohumsey Creek, twenty miles from Delaware Bay . . . . .	1853	50	1798	1853	1857	1853	1857	Med. Repos., 1799, p. 211.
Gloucester City, Camden Co. . . . .	On Delaware River . . . . .	1853	20	1805	1853	1857	1853	1857	J. H. Griscom, Visitations of Yellow Fever, p. 9.
Perth Amboy, Middlesex Co. . . . .	On Raritan Bay . . . . .	1853	20	1811	1853	1857	1853	1857	J. H. Griscom, Visitations of Yellow Fever, p. 9.
Port Elizabeth, Cumberland Co. . . . .	On Maurice River . . . . .	1853	20	1798	1853	1857	1853	1857	J. I. Griscom, Visitations of Yellow Fever, p. 4. J. I. Griscom, Visitations of Yellow Fever, p. 4. C. D. Griswold, B. M. and S. J., 1858, p. 214. Gillespie, Amer. Med. and Philo. Reg., vol. 3, p. 101, Ed. N. Y. J. M., 1856, p. 278.
Woodbury . . . . .	On Hudson River . . . . .	1853	85	1798	1853	1857	1853	1857	J. I. Griscom, Visitations of Yellow Fever, p. 9.
Albany . . . . .	On Hudson River . . . . .	1853	20	1798	1853	1857	1853	1857	J. I. Griscom, Visitations of Yellow Fever, p. 4. J. I. Griscom, Visitations of Yellow Fever, p. 4. C. D. Griswold, B. M. and S. J., 1858, p. 214. Gillespie, Amer. Med. and Philo. Reg., vol. 3, p. 101, Ed. N. Y. J. M., 1856, p. 278.
Bay Ridge, Long Island . . . . .	A seaport . . . . .	1853	40	1809	1853	1857	1853	1857	J. I. Griscom, Visitations of Yellow Fever, p. 9.
Brooklyn, Kings Co. . . . .	A seaport . . . . .	1853	40	1809	1853	1857	1853	1857	J. I. Griscom, Visitations of Yellow Fever, p. 4. J. I. Griscom, Visitations of Yellow Fever, p. 4. C. D. Griswold, B. M. and S. J., 1858, p. 214. Gillespie, Amer. Med. and Philo. Reg., vol. 3, p. 101, Ed. N. Y. J. M., 1856, p. 278.

*Table of Localities in the United States where Yellow Fever has appeared since A. D. 1668, &c.—Continued.*

State.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUSPEN- SION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
New York	Brooklyn, Kings Co.	A seaport.	40	1823	July 14				Carpenter, Sketches of Yellow Fever.
	Catskill, Greene Co.	On Hudson River.	50	1856					3d Nat'l Quarantine and Sanitary Convention, p. 41.
				1743					
				1794					
	Governor's Island.	New York Harbor.	25	1803	Aug. 10	Sept. 28	8		B. W. Dwight, M. Reps.
	Govanus, Kings Co.	On Govanus Cove, near New York Harbor.	15	1856	July 29	Oct. 26	49		3d Nat'l Quarantine and Sanitary Convention, p. 41.
	Greenfield, Saratoga Co.	Far inland.	150	1870	Sept. —				Report Board of Health, New York, 1870, p. 29.
	Huntington, Suffolk Co.	Huntington Bay.	20	1856					Va. M. J., 1856, p. 328.
				1798					J. G. Scott, M. Repos., 1807, p. 291.
	New York, New York Co.	A seaport.	35	1795					Dr. D. Hesseck, M. and Philos Reg., 1813, p. 191.
			1798					Do.	
			1668			Sept. 30	570		J. H. Griscom, M. Rep., 1856, p. 561.
			1793						J. H. Griscom, Visitations of Yellow Fever, p. 2.
			1732						J. H. Griscom, Visitations of Yellow Fever, p. 3.
			1741						Ed. N. Y. J. M., 1856, p. 278.
			1742						Do.
			1743				217		J. H. Griscom, Visitations of Yellow Fever, p. 3.
			1745						Do.
			1747						J. H. Griscom, Visitations of Yellow Fever, p. 4.
			1748						Daily Shreveport Times, vol. 2, No. 811, 1873.
			1762						Do.
			1790						W. Hume, Ch. M. J. and Rev., 1860, p. 24.
			1791	Aug. —		Oct. 15			Ed. N. Y. J. M., 1856, p. 278, and Brown, Quarantine, p. 6.
									Ed. N. Y. J. M., 1856, p. 278.
			1792						Do.
			1793						Do.
			1794						Bayley's Account of Epidemic Fever, 1795.
			1795	July 19			730		Ed. N. Y. J. M., 1856, p. 278
			1796						Do.
			1797						Do.
			1798	Aug. —		Nov. —	2,080		Do.
			1799	July —		Nov. —	76		Do.
			1800	Sept. —		Oct. 14	821		Do.
			1801	Sept. —		Oct. —	*16		Do.
			1802				2		Do.
			1803	July 18		Oct. —	6,700		W. Hume, Ch. M. J. and Rev., 1860, p. 24.
			1805	June —		Oct. —	340		Ed. N. Y. J. M., 1856, p. 278.
			1806	June —		Nov. —	20		J. H. Griscom, M. Rep., 1856, p. 561.
									Ed. N. Y. J. M., 1856, p. 278.

W. Hume, Ch. M. J. and Rev., 1860, p. 24.  
 Ed. N. Y. J. M., 1856, p. 278.  
 J. H. Griscom, M. Rep., 1856, p. 561.  
 Ed. N. Y. J. M., p. 278.



Table of Localities in the United States where Yellow Fever has appeared since A. D. 1638, &amp;c.—Continued.

State.	Location.	Situation.	Elevation, in feet, above sea-level.		DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
			Year.	Month.	Year.	Month.	Year.	Month.		
North Carolina	New Bern, Craven Co.	On Neuse River.	20	1769	Sept.	—	Nov.	—	700	M. Repos, 1800, p. 197.
	Smithville, Brunswick Co.	On Cape Fear River, near the ocean.	15	1864	—	—	—	—	—	Report Medical Inspector U. S. A., Dec. 31, 1864.
	Washington, Beaufort Co.	On Tar River, 40 miles from Pamlico Sound.	35	1800	—	—	—	—	—	W. T. Wragg, N. Y. M. J., vol. ix, No. 5, 1850, p. 49.
	Wilmington, New Han- over Co.	On Cape Fear River, 34 miles from the sea.	25	1796	—	—	—	—	—	M. Repos, 1800, p. 197.
				1800	—	—	—	—	—	J. H. Griscom, N. Y. J. M., p. 369.
Ohio				1821	Aug. 9	—	—	—	—	M. Repos, 1800, p. 197.
				1862	Aug. 6	—	Nov. 17	446	—	J. Hill, A. M. Rec., 1822, p. 86, and Brown, Quarant., p. 12.
			550	1871	—	—	—	—	—	W. T. Wragg, N. Y. J. M., 1869, p. 478, and 1869, p. 225.
			520	1873	—	—	—	—	—	Med. and Surg. Rep. vol. 25, No. 16, p. 354.
			550	1789	—	—	—	—	—	Health Office Report.
Pennsylvania				1798	—	—	—	—	—	A. Elliott, M. Repos., 1801, p. 71.
				1793	—	—	—	—	—	W. Harris, M. Repos., 1801, p. 75.
			25	1798	—	—	—	—	—	J. H. Griscom, Visitations of Yellow Fever, p. 9.
			15	1805	—	—	—	—	—	Howler Tables of Fev., p. 13.
			250	1803	Aug. —	—	—	—	—	La Roche, Yellow Fever, p. 68.
			15	1798	—	—	—	—	—	W. Baldwin, Med. Mns., 1805, p. 601.
			550	1799	—	—	—	—	—	J. Rush, Med. Mns., 1805, p. 62.
			35	1895	—	—	—	—	—	W. Harris, M. Repos., 1869, p. 75.
				1870	Aug. 1	—	—	—	—	J. N. Schoolfield, Va. M. J., 1857, p. 353.
				1792	—	—	—	—	—	R. La Roche, Ch. M. J. and Rev., 1853, p. 58.
				1741	—	—	—	—	—	Daily Shenandoah Times, vol. 2, No. 31, 1873.
				1742	—	—	—	—	—	J. H. Griscom, Visitations of Yellow Fever, p. 3.
				1743	—	—	—	—	—	B. Fowler, Tableau of Yellow Fever, p. 3.
				1744	—	—	—	—	—	Do.
				1747	—	—	—	—	—	Do.
				1762	Aug. —	—	Nov. —	—	—	R. La Roche, Ch. M. J. and Rev., 1852, p. 453.
				1791	—	—	—	—	—	J. H. Griscom, Visitations of Yellow Fever, p. 5.
				1783	Aug. 15	—	Dec. —	4, 641	—	Carey, Account of the Malignant Fever, p. 116.





Table of Localities in the United States where Yellow Fever has appeared since A. D. 1668, &amp;c.—Continued.

State.	Locality.	Situation.	Elevation, in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
South Carolina...	Charleston, Charleston dis- trict.	A seaport.....	10	Year.	Month.	Year.	Month.		
				1768					M. M. Dowler, N. O. M. J., 1859, p. 305.
				1770					T. Harris, Phil. M. and Rev., 1805, p. 21.
				1792					W. Hume, Ch. M. J. and Rev., 1852, p. 145, and Si- mons' Trans. Med. Ass'n S. C., 1851, p. 38.
				1794					Do.
				1795					Do.
				1796					Do.
				1797					Do.
				1798					T. V. Simons, Ch. M. J. and Rev., 1851, p. 779.
				1799				239	W. Hume, Ch. M. J. and Rev., 1854, p. 145, and Si- mons' Trans. Med. Soc. S. C., 1851, p. 38.
				1800				184	Do.
				1802				96	Do.
				1803					Simons' Trans. S. C. Med. Ass'n, 1851, p. 37.
				1804				148	Do.
				1805					Do.
				1807				162	Simons' Trans. S. C. Med. Ass'n, p. 35.
				1812	July		Nov.	272	W. Hume, Ch. M. J. and Rev., 1854, p. 145.
				1819	Aug.		Oct.	177	Dowler, N. O. M. J., 1859, p. 597.
				1822	June		Aug.	2	Do.
				1824	Aug.		Nov.	235	Do.
				1825	Aug.		Sept.	2	Do.
				1827	Aug.		Nov.	64	Do.
				1828	Aug.		Sept.	96	Do.
				1830	Sept.		Nov.	39	Do.
				1834	Aug.		Oct.	40	Do.
				1835	Aug.		Sept.	25	Do.
				1838	Aug.		Nov.	351	Do.
				1839	June		Oct.	131	Do.
				1840	Aug.		Oct.	22	Do.
				1841					Simons' Trans. S. C. Med. Ass'n, p. 59.
				1843			Nov.	1	Dowler, N. O. M. J., p. 597.
				1849	Aug.		Nov.	135	Do.
				1852	Aug.		Nov.	310	Do.
				1854	Aug.		Nov.	627	Do.
				1856	Aug.		Nov.	211	Do.
				1857	Sept.		Nov.	13	Do.

				July	Dec.	717	Do.
	1854	1854	1854	July 27	.....	.....	Brown, Quarantine, p. 29.
	10	1861	1861	July 10	.....	.....	Trans. A. M. A., vol. 23, p. 292.
	10	1871	1871	Aug. 6	.....	.....	Simons' Trans. A. M. A., vol. 23, p. 293.
	173	1854	1854	Aug. 6	.....	.....	Trans. A. M. A., vol. 23, p. 431.
	15	1852	1852	Aug. 15	.....	.....	Ed. Nash, J. M. and S., 1854, p. 345.
	10	1854	1854	Aug. 20	.....	.....	M. M. Fowler, N. O. M. J., 1854, p. 305.
	10	1854	1854	Aug. 20	.....	.....	Ch. M. J. and Rev., 1858, p. 844.
	10	1854	1854	Aug. 20	.....	.....	W. C. Miller, Ch. M. J. and Rev., 1856, p. 19.
	10	1862	1862	Sept. 8	.....	.....	Brown, Quarantine, p. 30.
	10	1847	1847	Sept. 8	.....	.....	R. A. Kinloch, Ch. M. J. and Rev., 1858, p. 793.
	10	1848	1848	.....	.....	.....	Do.
	1852	1852	1852	.....	.....	.....	Do.
	1854	1854	1854	.....	.....	.....	Do.
	1856	1856	1856	.....	.....	.....	Do.
	1857	1857	1857	.....	.....	.....	Do.
	200	1853	1853	.....	.....	.....	W. J. Tack, N. O. M. and S. J., 1854, p. 662.
	1866	1866	1866	.....	.....	.....	A. P. Merrill, Galv. M. J., 1867, p. 861.
	1873	1873	1873	Sept. 14	.....	.....	Ed. A. mer. Press., vol. 8, 1873, p. 319.
	1867	1867	1867	Sept. 4	.....	.....	Memphis Board of Health. See G. B. Thornton in
	250	1867	1867	Sept. 4	.....	.....	Report of Supervising Surgeon U. S. Mar. Hosp.
	200	1867	1867	.....	.....	.....	Service, 1873.
	260	1867	1867	.....	.....	.....	Trans. A. M. A., vol. 19, p. 289.
	50	1863	1863	.....	.....	.....	Trans. A. M. A., vol. 19, p. 275.
	180	1855	1855	.....	.....	.....	Galv. M. J., 1867, vol. 2, No. 10, p. 930.
	20	1859	1859	Aug. 11	.....	.....	Trans. A. M. A., vol. 19, p. 275.
	300	1867	1867	Sept. 23	.....	.....	Brown, Quarantine, p. 71.
	25	1853	1853	Aug. —	.....	.....	J. Stephens, N. O. M. and S. J., 1856, p. 601.
	325	1862	1862	Oct. 12	.....	.....	B. Dowler, N. O. M. J., 1860, p. 443.
	325	1867	1867	Oct. 12	.....	.....	Trans. A. M. A., vol. 19, p. 275.
	200	1867	1867	Aug. 6	.....	.....	Army Medical Statistics, p. 353.
	250	1873	1873	.....	.....	.....	S. Chaille, N. O. M. and S. J., 1858, p. 811.
	25	1833	1833	.....	.....	.....	Galv. M. J., 1866, p. 170.
	395	1873	1873	.....	.....	.....	Newspapers.
	15	1862	1862	Aug. —	.....	.....	Trans. A. M. A., vol. 19, p. 275.
	1867	1867	1867	.....	.....	.....	Newspapers.
	1873	1873	1873	.....	.....	.....	Galv. M. J., 1866, p. 163.
	15	1862	1862	.....	.....	.....	Newspapers.
	1867	1867	1867	.....	.....	.....	Galv. M. J., 1866, p. 170.
	1873	1873	1873	.....	.....	.....	Brown, Quarantine, p. 70.
	15	1862	1862	.....	.....	.....	Newspapers.

\* Not within the incorporated limits of Charleston, South Carolina.







Table of Localities in the United States where Yellow Fever has appeared since A. D. 1668, &c.—Continued.

State.	Locality.	Situation.	Elevation in feet, above sea-level.	DATE OF COM- MENCEMENT.		DATE OF SUS- PENSION.		Mortality.	Authority.
				Year.	Month.	Year.	Month.		
Virginia .....	Richmond, Henrico Co. ....	On James River. ....	50	1806	.....	.....	.....	.....	M. Repas, 1807, p. 215.
	Scott's Creek, near Ports- mouth.	.....	15	1853	June 29	.....	.....	.....	J. A. Manning, Va. M. J., 1857, p. 29.
	Winchester, Frederick Co.	29 miles from the Blue Ridge Mountains.	700	1804	July —	.....	.....	.....	R. Dunbar, Med. Repos., 1805, p. 252.



CHART  
OF  
**YELLOW FEVER**  
IN THE  
**United States**

*Giving Elevations above Sea-Level of Localities where  
Yellow Fever has appeared since A.D. 1668.*

Prepared by  
**DR. J. M. TONER**

*to accompany his paper on  
The Distribution and Natural History of Yellow Fever in the United States  
in the Report of the  
Supervising Surgeon  
-John M. Woodworth-  
United States Marine-Hospital Service*

*(Figures accompanying Names of Localities indicate Elevation above Sea-Level in Feet.)*





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THE YELLOW-FEVER EPIDEMIC OF 1873.

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## C.—THE YELLOW-FEVER EPIDEMIC OF 1873.

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[THE intimate connection of the sea-faring community with every epidemic of yellow fever in the United States of which we have any trustworthy account, seemed to render it desirable to secure as full reports as possible of the epidemic of 1873, from the stand-point of the surgeons of the Marine-Hospital Service, or from those in charge of marine-hospital patients at ports where the disease appeared. With this object the Supervising Surgeon, about the middle of October, addressed a letter to these gentlemen, requesting them to furnish such facts as came under their observation relating to yellow fever at their ports; the dates of its first appearance thereat; the places from which it was imported, and the modes of introduction; the number of cases and of deaths which occurred; the hygienic conditions of their respective communities; the influence of quarantine or other precautionary measures upon the introduction or arrest of the disease; and such other local observations as might be deemed pertinent, or as they were able to make. In response to this request, reports, more or less detailed, have been received from New York City, Mobile, New Orleans, Memphis, Cairo, and Louisville; and a report from Pensacola is promised, as also one from Shreveport, delayed through the illness of the surgeon.]

The epidemic is probably too recent to secure accounts satisfactory in every particular; the interruption of usual methods and routine, the relaxation following the terrible mental and physical strain, the slow convalescence from the disease itself in some cases—all these causes have combined to render the received reports imperfect. But they are, nevertheless, fuller than any that have at this date appeared, and form a not unimportant contribution to the history of a disease which has cost the Southern and Gulf States untold millions of dollars, and, it is safe to say, more lives than they have lost in warfare.

Extended comment upon these reports is advisedly deferred for the present, in the expectation of obtaining fuller information on certain points, and of correcting some discrepancies in those already furnished. It will be noted, for example, in the table on page 111, compiled from the reports mentioned, and from the *Monthly Returns of sick and disabled*, that while the disease is not reported as having made its appearance at Shreveport until the 12th of August, it is alleged to have been brought to Memphis as early as the 10th of that month, by a traveler, from the former place. It will probably be found that this traveler contracted his disease on board the tow-boat which brought him from the mouth of Red River to Memphis, (see Dr. Thornton's report page 104,) and which left New Orleans August 2, yellow fever having prevailed there from the

latter part of June, or early part of July. This inference is further strengthened by the fact that on the arrival of this boat at Memphis her captain and several of the crew were sick, and, though of what disease is not stated, the body of the captain, who died a few hours after leaving Memphis, presented every appearance of having died of yellow fever. If it can be obtained, the history of this tow-boat, which is presumably the same as the one mentioned in the Cairo report, will probably determine this point.

It will be interesting, also, to collate the experience of southern physicians and their views of the relation of dengue to yellow fever, and of the influence of the latter upon the endemic fevers. The reports of the surgeons of the Marine-Hospital Service, immediately preceding and during the yellow-fever epidemic of 1873, show a marked increase in the number of cases, and in the virulence and fatality of this class of the so-called zymotic diseases due to paludal malaria. It was especially noticed that the intermittent fevers were prone to take on the congestive form; and the terms "pernicious," "congestive," and "malignant" occur quite frequently in the reports made during the months of, and immediately preceding, the epidemic. In New Orleans the yellow fever seems to have been overshadowed by an epidemic of dengue or "break-bone fever," from which it is estimated that fully 50,000 of the inhabitants suffered. Dr. Reilly (U. S. M-H. S.) states that the same condition obtained during the yellow-fever epidemic of 1854 in Charleston, S. C., when so many natives were attacked, with such a light mortality; and observes that physicians then differed widely in their diagnoses, many reporting cases as yellow fever which others called "break-bone fever." This may serve to explain the anomaly of natives apparently suffering from yellow fever, as well as of cases reported among those who had suffered in previous epidemics. Dr. Reilly himself, for instance, after having had a severe attack of unmistakable yellow fever, with black vomit, in 1852, was again treated for the same disease during the epidemic of 1854, but from the brief duration of the attack, the severity and character of the accompanying pain, and other symptoms, it seems probable that this second disease was the so-called "break-bone fever."

Of more direct practical utility, however, is the study of measures of prevention—the answer to the question how far the use of carbolic acid is to be credited with the jugulation of the threatened epidemic at New Orleans and Mobile; to what extent efficient or defective sanitary measures affect the progress of yellow fever, in the light of the recent experience in the two former cities as compared with Memphis and Shreveport; what is proper quarantine for this disease at various ports, and what is the true scope, function and value of quarantine; can a quarantine be effective which does not embrace "commerce with foreign nations and among the several States" by land, as well as by water? Inquiries concerning these and kindred matters are still being prosecuted

by the medical officers of the Service; and from the results of their studies it is hoped to be able to frame a plan of prophylactic action to be observed by marine-hospital surgeons throughout the yellow-fever season, the results of which should form an interesting feature of the subsequent annual reports of the Supervising Surgeon.

Meantime, it may be remarked that the substantial immunity of New Orleans and Mobile from yellow fever this year, under similar conditions of repeated exposures on the one hand, and of well-organized municipal sanitation, coupled with free carbolic disinfection, on the other, would seem to indicate that one or both of these latter are sufficient to arrest yellow fever, or at least to prevent its becoming epidemic. To what extent the use of carbolic acid is an efficient agent is yet to be determined; but of the value of general disinfection, thorough cleanliness, good sewerage, pure air, unpolluted water, wholesome food, individual hygiene—in short, of what goes to make up a good sanitary condition, there can be no question. When such a condition obtains generally throughout the land it will probably only remain to prevent the introduction of fomites, by an intelligent quarantine, in order to be justified in writing *dele* opposite *febris flava* in the American nosology.—W.]

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#### REPORTS ON YELLOW FEVER IN 1873.

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*From the Medical Officers of the United States Marine-Hospital Service.*

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NEW YORK, December 1, 1873.

SIR: In answer to your communication of the 15th ultimo, concerning yellow fever, I have the honor to submit the following report of cases treated in United States Marine Hospital, (Class II,) port of New York, year 1873:

1. Jorgen Andersen; æt. 23; nationality, Swedish; occupation, seaman; admitted from schooner *Jennie Stout*; taken sick on passage from New Orleans; entered hospital July 30; died August 1.

The two following cases from same vessel, admitted at same time, recovered: 2. Gulick Gulbrozen; æt. 23; discharged August 21. 3. Bernard Nicholson; æt. 37; discharged November 3.

4. George Otto; æt. 19; nationality, German; occupation, waiter; admitted from steamer *Morro Castle*; taken sick on passage from Havana; entered hospital August 30; died September 1.

5. Madison Wisnore; æt. 27; nationality, American; occupation, engineer; admitted from steamer *Metropolis*; was sick in New Orleans, though the disease was not positively ascertained to have been yellow fever; entered hospital September 22; died September 27. This was undoubted yellow fever when received, and was probably a relapse.

I have also obtained from the records of the Board of Health of this city the particulars of the only cases there reported, as follows:

Fred. W. Bacon; æt. 22; waiter on steamer *Yazoo*; sailed from New Orleans for Philadelphia latter part of May; touched at Havana; and was quarantined, on account of cholera, in New Orleans. Sickness appeared on the ship May 27; arrived at Philadelphia May 29; was not quarantined. Bacon came on to New York; arrived May 31; sick on arrival; taken to No. 7 Eldridge street, and died June 2.



Patrick Hennessy; æt. 30; came from Memphis last of October; also sick on arrival; died in ambulance, on way to hospital, October 30.

The cases reported in Brooklyn were newspaper cases, and were pronounced to be malarial fever by competent authority.

I have the honor, also, to transmit the inclosed communication from Dr. Mosher, deputy health-officer of the port of New York:

HEALTH-OFFICER'S DEPARTMENT,  
*Quarantine, Tompkinsville, S. I., November 3, 1873.*

MY DEAR DOCTOR: I am requested by Dr. Van der Poel to furnish, in answer to your inquiry of 30th ultimo, the following:

Cases of yellow fever occurring at quarantine during 1873:

(1.) First case, May 23. (2.) Last case, October 1. (3.) Total number of cases, 62.  
(4.) Mortality, 13 deaths. (5.) All cases were taken from vessels arriving at this port.

Very truly, yours,

J. S. MOSHER.

DR. HEBER SMITH.

From the foregoing it will be seen that there were in all sixty-nine cases of yellow fever, and eighteen deaths therefrom, at this port during the past season; and that so long as quarantine is a matter controlled by State caprice or fear, there is nothing to prevent the introduction of this or any other disease into a community, no matter how rigid or perfect the quarantine of such community may be made—and its present administration at New York is both.

That the yellow fever failed to become epidemic in New York the past season—that it is not epidemic in New York every season—is due, probably, first, to the want of favoring conditions in the season itself, and, second, to the efficiency of the Board of Health; but certainly not to the want of a supply of fomites furnished by land from other ports.

I am, sir, very respectfully, your obedient servant,

HEBER SMITH,

*Surgeon U. S. M-H. S.*

JOHN M. WOODWORTH, M. D.,

*Supervising Surgeon U. S. M-H. S.*

NEW ORLEANS, LA., *November 5, 1873.*

SIR: Referring to your letter of October 24, asking for "a sketch of the present yellow-fever epidemic, on its subsidence, the local influences that have affected the disease," etc., I have the honor to state that the first ascertained cases of yellow fever reported in the city were from the Spanish bark *Valparaiso*, which arrived here from Havana in ballast with five passengers, June 26, 1873, having been detained at quarantine four or five days. The mate of this vessel is the only one on board who did not recover, but several vessels lying in the immediate vicinity lost a number of their crew. The number of cases and deaths from the disease to the 29th ult. is as follows:

*Weekly Statement of Yellow-Fever Cases and Deaths in New Orleans during the Season of 1873.*

During the week ending—	Cases.	Deaths.	During the week ending—	Cases.	Deaths.
<i>Six o'clock p. m.</i>			<i>Six o'clock p. m.</i>		
July 6, 1873.....	1	—	September 14, 1873.....	60	35
July 13, 1873.....	2	1	September 21, 1873.....	37	26
July 20, 1873.....	1	—	September 28, 1873.....	32	21
July 27, 1873.....	1	1	October 5, 1873.....	42	14
August 3, 1873.....	5	—	October 12, 1873.....	32	24
August 10, 1873.....	6	3	October 19, 1873.....	31	18
August 17, 1873.....	10	2	October 26, 1873.....	19	11
August 24, 1873.....	8	2			
August 31, 1873.....	16	6	Total.....	343	187
September 7, 1873.....	38	16			

For the foregoing table I am indebted to the courtesy of Dr. S. C. Russell, secretary of New Orleans Board of Health.\*

It is certain that our first cases came from Havana. Quarantine did not prevent it; and it is the opinion of the medical gentlemen who went from here at the first call of distress from Shreveport, that yellow fever was carried to the latter place from New Orleans. Drs. Bruns, Choppin, and Davidson, the physicians referred to, are intelligent, experienced, and well-known members of the faculty, and their opinions are entitled to respect.

New Orleans has been terribly exposed this season from all quarters; for though the disease was brought here originally from Havana, there has been constant communication between this port, Shreveport, and Memphis, and thus repeated new importations. Nurses went from here to Shreveport and returned during the height of the epidemic there and died of the disease here; and fugitives from the pestilence in Shreveport came here to die. To what influence we owe our immunity from the disease, for it has not shown a disposition to spread, I am not prepared to express an opinion, particularly when old physicians of this city, who have devoted a lifetime, one may say, to the study of yellow fever, seeing it in all its phases, have openly confessed their inability to interpret its true nature, and, to use their own words, "the more they saw of it the less they knew about it."

Are we indebted to quarantine regulations for the small number of victims of this scourge? This is hardly probable, for it is proved that the disease was imported from Havana as early as July 6, and it did not appear in Shreveport until the middle of August. Vessels have been arriving weekly from Havana, where the mortality was from four to five hundred daily [weekly?] in July and August, sparing neither native nor foreigner;† and in Memphis, Shreveport, and elsewhere the disease has been fatal almost without parallel. And yet I may safely assert that New Orleans, during the last season, has been one of the few cities of the Union that can boast of a small death-rate in proportion to its population. To what, then, are we to attribute this miraculous escape? In my opinion, thanks are due to good sanitary regulations, to the watchfulness and activity of the board of health, and to the free use of carbolic acid,‡ that yellow fever in this city has been greatly modified, if not completely disarmed of its subtle and terrible power.

I am, sir, very respectfully, your obedient servant,

ORSAMUS SMITH,  
*Surgeon U. S. M-H. S.*

JOHN M. WOODWORTH, M. D.,  
*Supervising Surgeon U. S. M-H. S.*

\* [The total number of cases, as subsequently reported by Dr. Smith in "Disease and Injury Return" for November, 1873, is given at 394, with a total of 225 deaths; the first case (the mate of the *Vai-paraiso*) appeared on July 4, died July 8; the last case reported, taken sick November 18, died November 24.—W.]

† This statement I have from one who was in Havana during this time.

‡ [It is asserted that nowhere in the world before has disinfection on so extensive a scale been resorted to as in New Orleans during the yellow-fever season of 1873; and, as also in Mobile, it met with considerable opposition from some quarters. Concerning the value of this disinfection, which was begun in New Orleans during the first week in August by the free use of impure carbolic acid, Dr. A. W. Perry, Sanitary Inspector New Orleans Board of Health, in a communication to the *New Orleans Medical and Surgical Journal* for November, says: "To ascertain whether or not the small number of subsequent cases (in infected districts) was because of the small number of persons liable to yellow fever who lived in these squares, a census was taken of the total population of each of the squares, and also of the white persons who had come to the city since 1867, the last epidemic year. In thirty squares, in which most of the yellow-fever cases occurred, the total population was 5,223 an average of 174 per square; of these 1,249 were liable to take yellow fever, being nearly 24 per cent. liable. Of the liable persons 7.3 per cent. took the disease before disinfection, and .9 of one per cent. after disinfection." As an isolated fact this is certainly very striking; but isolated facts are not conclusive, and this question is still open for investigation.—W.]

MEMPHIS, TENN., November 18, 1873.

DEAR SIR: Your communication of the 24th ultimo, requesting me to furnish such facts in regard to the late epidemic of yellow fever in Memphis as are at my command, was duly received, and has already been acknowledged. The delay in furnishing the desired information is due partially to the stress of other duties and engagements growing out of the epidemic, and partially to the necessity of sifting facts from rumors and speculations, which are always rife at such a time.

From the best information I can get on the subject, the first case of yellow fever died in Memphis on the 10th of August. This was a man named Davis, who had been in Texas, and on his way home to Alabama passed through Shreveport, La., during the late epidemic there.

At the mouth of Red River he got on the tow-boat *Bee*, which left New Orleans August 2. The man was put off the boat here at the upper landing, near the mouth of Wolf River, in the afternoon of the 10th of August. At the time he was very ill, unable to take care of himself, and was cared for a few hours by a man named Riley and another man, (name not known,) who lived near the landing. That evening he was carried to the Adams-street station-house, where he died during the night. No physician saw him, but, from what I can learn, there was no doubt of his being a case of yellow fever. Riley, the man with him, and several members of his (Riley's) family, contracted the disease and died a few days after. The physician who visited them I have been unable to find, but the presumption is they were attended by Dr. Crone, who died of yellow fever in September. When the tow-boat arrived here, the captain, C. B. Gall, and several of the crew, were sick. The boat remained here but a few hours, and then proceeded on its trip up the river. At Osceola, Ark., the captain died, and his body was shipped back to Memphis for burial. The body was not coffined until after its arrival here, on the 11th of August, and presented all the appearances of having died of yellow fever.

There were a number of deaths during the last two weeks of August in the neighborhood of the place where the *Bee* landed, but they were not reported as yellow fever by the physicians who attended them. The first case that there is any official record of is the case that I reported in the City Hospital. A patient was admitted to this hospital September 2, very ill with yellow fever; had evidently been sick several days, and died on the 3d. The register then shows admissions of yellow fever patients on September 3, 5, 8, &c. I am satisfied there were a number of cases in the city before any were admitted to hospital, but the disease, if recognized by any physician, was not reported as such.

On September 3 I was called to visit a child at the St. Peter's Orphan Asylum, a Catholic institution, located a short distance from the City Hospital. This child was admitted into the Asylum August 28, apparently well; was taken sick on the 2d of September, and died on the 7th. For twenty-four hours previous to death it had unmistakable black-vomit. This child was brought to the Asylum from the foot of Market street, which is in the immediate neighborhood of the point where the boat *Bee* landed, and there had been several deaths in the house whence the child was brought.

The disease prevailed mostly in the northwestern portion of the city, between Washington and Concord streets. But it extended north beyond the bayou to a part of the city known as Chelsea, (the Ninth ward.) mostly occupied by residences, and prevailed here, to a very considerable extent, more than it did in any other suburb. It also extended south and east as far as the city limits, and I knew of several cases beyond the city limits east. It was never as bad in south or central Memphis as in that portion of the city north of where the first case was reported. My opinion is the infection was conveyed by the wind, which in summer and fall, with us, blows from the south to the portion of the city north of the infected district.

The number of deaths from yellow fever will never be definitely known, as proper official record for the city was not kept, and a number of deaths from the disease were reported as from other causes. And, moreover, for at least three weeks after the disease appeared physicians did not recognize it, or at least did not report yellow fever.



The number of deaths from September 14, the date it was first officially published, to November 9, is as follows, taken from the printed reports of the secretary of the Board of Health :

From September 14 to 30, inclusive.....	259
From October 1 to 31, inclusive.....	899
From November 1 to 9, inclusive.....	86
Total .....	1,244

The largest number of deaths on any one day occurred October 10, when 55 died.

There have been deaths from the disease reported since the 9th of November ; and there will, no doubt, be others even after this, November 18.

The report from the City Hospital from September 2 to October 31, inclusive, is as follows:

Number of cases admitted from September 2 to October 31, inclusive.....	169
Deaths from yellow fever.....	103

Number of cases in hospital October 31, 18.. Of these, 13 are convalescent and 5 are under treatment.

(The above is taken from report made to the secretary of the Board of Health November 1.)

The deaths in the City Hospital, and also in the Walthall Infirmary, a temporary hospital established during the epidemic, are included in the report of deaths published by the secretary of the Board of Health for the whole city. This is as near as I can give the deaths at this time.

I am unable to give the number of cases that occurred in the city, nor will it ever be known. The misfortune was that there was no well-organized, paid board of health at that time ; our city was defective in its sanitary regulations, and there are no official records of a vital or sanitary character outside of the City Hospital prior to September 2. There is no doubt in my mind that yellow fever was brought here from the South early in August. But I am unable to ascertain when the first case occurred among the residents of the city. I think there is no doubt of its occurring after the 10th of August. Nor do I think there is any doubt of there having been deaths here among the residents of that portion of the city subsequently known as the "infected district" prior to September 1.

There were only four deaths of marine patients from yellow fever in the hospital during the epidemic, three white men and one negro. They have been reported in my official reports to your office, and were included in the general mortality report of the city.

I am, sir, most respectfully, your obedient servant,

G. B. THORNTON, M. D.

JOHN M. WOODWORTH, M. D.,

*Supervising Surgeon U. S. M-H. S.*

MOBILE, ALA., December 6, 1873.

SIR: In compliance with your letter, dated October 24, relative to yellow fever in Mobile this season, I have the honor to submit the following:

The published report of the health-officer to the Advisory Board of Health—an extemporized organization, created to assist the city physician during the prevalence of the epidemic—is so full and complete for the period prior to November 1, that it will not be necessary to do more than summarize my own observations and experience of the epidemic, and to complete the table of cases by adding those which occurred subsequent to October 25.



The following table gives the dates of occurrence, and number of cases on each day, with the result of the cases:

Date of occurrence.				Date of occurrence.			
Result.				Result.			
No. of cases.				No. of cases.			
Died.				Died.			
Recovered.				Recovered.			
August 21.....	1	1	.....	October 13.....	2	.....	2
September 11.....	2	1	1	14.....	1	1	.....
15.....	2	1	1	15.....	1	.....	1
17.....	2	2	.....	16.....	1	1	.....
18.....	1	.....	1	21.....	5	2	3
20.....	1	1	.....	23.....	1	1	.....
22.....	3	1	2	25.....	1	1	.....
23.....	1	.....	1	November 2.....	1	1	.....
25.....	1	1	.....	3.....	1	1	.....
26.....	5	1	4	8.....	2	1	1
30.....	1	1	.....	17.....	1	1	.....
October 1.....	2	1	1	23.....	1	1	.....
4.....	1	.....	1	27.....	1	.....	1
5.....	3	2	1	29.....	1	1	.....
6.....	1	1	.....	Total.....	50	27	23
8.....	2	.....	2				
9.....	1	1	.....				

The first case of yellow fever that appeared in Mobile was that of Owen McKenna. The facts in this case, as reported by Dr. Hicklin, the health-officer, are as follows: "A resident of Mobile the past three years, unacclimated; went to New Orleans on the 16th of August and returned the following day, 17th. He was taken sick on the 21st, and died on the 26th day of the same month. His attending physician pronounced it yellow fever. He resided on Hamilton street, southeastern portion of the city, and was the only case known to me, save Dr. F. M. Stone, who sickened and died of the disease in the month of October, that occurred in that section of the city during the entire prevalence of the disease." Dr. H. states that McKenna's death was before the date of his appointment to office, and he was not apprised whether any disinfection of the premises was made. It may here be stated that the chief duty of the health-officer to the Advisory Board was to superintend the disinfecting of all sections and premises where the disease appeared, the physicians being requested to report every case which occurred under their charge at the earliest moment possible.

The next case came directly from Shreveport via New Orleans. He resided above Shreveport, and in passing that city remained all night. On the morning of September 11 he was found on the wharf, under an old shed, by a policeman, who conveyed him to the hospital, by order of the city physician, who had seen and examined the case, and pronounced it to be yellow fever; died on the 13th. On the way to the hospital he was supported in the conveyance by the said policeman, who together with his son were both taken sick the 15th and 18th, respectively, on Spring Hill road, in the north-western portion of the city, immediately in the district which afterward became the "infected quarter," and from which the disease spread in that portion of the city.

In the hospital where this second case was carried and died there have been eight cases treated, including his, all of which originated therein, none being admitted from outside save that. Of this number five died and three recovered.

The disease was introduced into the marine hospital in the following manner: On the 11th of September Robert Smith, an Englishman, long a resident of Mobile, was admitted with what was recorded as intermittent fever, a diagnosis based upon the periodicity in the occurrence of two successive chills followed by fever. The first chill took place on the 10th of September, the day prior to his admission. These chills recurred on the 12th, 13th, and 14th, after which his fever became continuous and the

complication of another disease, yellow fever, was recognized. This patient had been under treatment a few months before for malarial fever. Investigation of his case furnished the following facts: He was employed as a watchman on the steamer *Emma* No. 2, that had been lying for a considerable time at the end of the wharf from which Dixon, the Shreveport case, was taken. From idle curiosity Smith visited Dixon under the shed, a short distance from the steamer, and assisted in placing him in the conveyance for the city hospital. This was on the morning of the evening Smith took sick, and doubtless was the source and time of his infection. This was a typical case of the existence of two distinct morbid poisons operating at the same time in the system. After a severe illness of seventeen days, and the occurrence of black-vomit on the third day of the fever, reckoning from the date of its recognition, this patient made a fair recovery.

At this time thorough disinfection was instituted and maintained in and around the hospital-buildings for a period of six weeks, under the supervision of the health-officer, acting under the directions of the Board of Health, and to whose opinion as to its efficacy in its employment generally throughout infected localities I shall have occasion to refer further on.

*Case 29.*—On the 8th of October O. L. Crampton\* was taken ill of yellow fever at this hospital, where he was quartered, and after an illness of nine days recovered. The infection, doubtless, was in this instance from the Englishman, Smith, as the prevailing winds were, up to this time, from the north and east, carrying the germ of the disease from the already infected buildings, the city hospital and infirmary, to the south and west. It is not known that exposure from any other source could have happened, as every precaution had been observed in protecting against it by confinement to the building after certain hours in the evening and before certain hours in the morning, thereby escaping the moist, and consequently dangerous, night air that existed almost constantly through the months of October and November. It may be well to state, in explanation of the situation of the hospital buildings mentioned, that the marine hospital is situated on Saint Anthony street, north side, between Bayou street on the east, and Jefferson street on the west, occupying, with its grounds, an entire block. The city hospital covers the greater portion of the adjoining block to the west, facing on Saint Anthony street; and the infirmary, the block directly opposite the city hospital, facing likewise on Saint Anthony street. These squares, together with the one opposite the marine hospital, comprise about eight square acres and cover what was designated the first and essential "infected section," upon which the Board of Health directed all its energies in a rigid quarantine and thorough disinfection.

*Case 35.*—Mr. C. C. Colton, employed in the custom-house of this city as hospital and enrolling clerk, was attacked with yellow fever October 16, and died in this hospital October 20, a victim of the most malignant type of the disease. Mr. Colton was from the northern part of this State, where he had engaged in "planting" for the past six years; had been a resident of this city five months, and consequently unacclimated; knowing the danger he would incur in remaining in the city constantly, he had determined upon the risk, and to remain until such a time as it should be pronounced an epidemic. By invitation he made this hospital his residence, as a guest of the surgeon in charge; and though the true character of the disease was made known to him by the attending physician to case 29, he chose to remain and nurse said case, from which he took the disease, with the result as above mentioned.

From case 29, three seamen, 31, 32, and 34; a colored servant, gardener to the hospital, (case 37,) and the steward of the hospital, (case 36,) took yellow fever and recovered. Two of the seamen had just arrived from New York City; discharged from their ship sick; applied to the hospital for treatment, and accidentally entered the room in which case 29 was sick. The third seaman had been an inmate of the hospital for some time with a chronic disease, and was exposed in like manner; and the steward and servant assisted in case 29.

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\* The surgeon in charge.—W.

It is a noticeable fact that only those persons directly exposed to case 29 were attacked, and that others throughout the building escaped, having no access to the rooms of those sick of the fever. Every precaution was taken to isolate all those immediately exposed, and to prevent a spread by saturating the atmosphere of the wards, and throughout the building, with carbolic acid and chloride of lime.

The cases occurring in November were mostly those who, as refugees, had remained absent from the city during the existence of quarantine, and returned too early, though advised so to do by their physicians, basing their opinions on the action of the Board of Health in recommending the raising of quarantine, and the return of citizens to the city. Doubtless the greater rate of mortality among this class over those that remained in the city was due to facts well known to the profession. Two of these returned refugees died in houses that had remained unoccupied and unopened during the season.

The means employed to arrest the course of the yellow fever were the energetic, thorough, and liberal use of carbolic acid throughout the vicinity of the infected district and premises having fever cases. The winds, with an average mean temperature of 78°.5, continuing to prevail from the north and east during most of the season, carried the disease to the south and west, leaving the "primary infected section," a small corner in the northeastern portion of the greater area, that finally became known as the "*infected district*." The efforts to prevent the yellow fever from extending beyond this district met with deserved success; and the course pursued by the Board of Health of New Orleans, in the epidemic of yellow fever of 1871, in "stamping out" the disease, was strictly pursued here. The health-officer of Mobile states in his report that, during a period commencing September 18 and ending October 20, he "had used over a thousand gallons of crude carbolic acid and nearly three thousand pounds of sulphate of iron. Chlorine gas, used for the purpose of fumigation in the houses, was generated by the action of sulphuric acid upon the black oxide of manganese and chloride of sodium." In concluding his report Dr. Hicklin remarks, "that the result of their labors," speaking of the Board of Health of Mobile, "is too apparent to the world, when the mortuary record of the past two months is consulted, to permit a doubt to remain in the mind of any honest individual as to the good they have done." And further, "New Orleans and Mobile were at the beginning of the season in close, almost daily, communication with Shreveport, Memphis, Pensacola, and Montgomery. The two first, New Orleans and Mobile, began an early and systematic use of disinfectants and fumigations. They escaped, or hedged in the disease, and no *epidemic* resulted, notwithstanding cases were brought into the midst of each of them from the hot-bed of the disease, Shreveport."

In summing up the facts in the history of the disease in Mobile this year, it would appear that the theories advanced as to the nature, cause, and prophylaxis of yellow fever, by Dr. C. B. White, of New Orleans, in his annual report for 1871, based, I presume, chiefly upon his experience in that epidemic, have received another valuable support in like results effected in Mobile this season.

I am, sir, very respectfully, your obedient servant,

O. L. CRAMPTON,

*Surgeon-in-charge U. S. Marine Hospital, Mobile.*

JOHN M. WOODWORTH, M. D.

*Supervising Surgeon U. S. M-H. S.*

CAIRO, ILL., November 8, 1873. |

SIR: In response to your request of the 25th October for the facts concerning the cases of yellow fever at this place, I have the honor to state that, during the summer and even after the disease was raging as an epidemic at Shreveport, the Illinois Central Railroad Company continued to receive cotton direct from that place and from Memphis. This cotton and other freight was received on board the transfer wharf-



boat, conveyed up the bank to the depot and shipped east. Considerable freight from below, including cotton, was also received at Captain Phillips's wharf-boat. At the same time the work of filling in and constructing a new wharf was being carried on in the immediate vicinity of the transfer wharf-boat, which gave employment to thirty or forty teams hauling in the earth from near the Mississippi River.

On the 1st of September I received two cases of yellow fever at the hospital from the steamer *Mary Alice*; on the 10th, two cases from the tow-boat *B*; and on the 24th, one case from the *Keystone*. Four of these cases were fatal, being in the stage of collapse when brought in. The fatal cases all had black vomit, with more or less general hemorrhage from the mucous membranes, and the *post mortem* appearances answered the descriptions given in the books—orange-colored or golden-yellow liver; mucous membrane of stomach highly inflamed; shrunken and almost empty gall and urinary bladders, etc.

The first fatal case among the citizens did not occur until September 13, when the cashier of the Illinois Central wharf-boat died. Then followed in rapid succession several other cases among persons employed in the same locality. Next, the clerk of Captain Phillips's wharf-boat sickened, and died on the fourth day. His nurse, a colored woman, who did the washing of his clothing, took the disease and died one week after; and a child in the house where the nurse died also took the disease, but recovered.

There were in all thirteen deaths out of about three times that number of cases of yellow-fever among the citizens, making, with the four deaths among those landed here with the disease, seventeen deaths from yellow fever between September 1 and September 25.

It was especially noted that the disease was confined to persons employed about the river and the localities above described; the four or five exceptions which occurred being in the families of men who were thus employed.

The disease did not make its appearance among the citizens until after the first two cases were received at the hospital from the steamer; and no new fatal cases occurred among citizens after the establishment of quarantine.

Very truly,

H. WARDNER.

JOHN M. WOODWORTH, M. D.,

*Supervising Surgeon U. S. M-H. S.*

LOUISVILLE, Ky., December 2, 1873.

SIR: I send you herewith, as requested, report of cases of yellow fever occurring in this city during September and October, 1873.

As there were no cases of this disease among the patients admitted to the Marine Hospital, this report is compiled from the reports of the attending physicians, who have been good enough to place the same at my disposal. I desire, in this connection, to acknowledge the receipt of such information from Drs. Fenner, Hewitt, Given, Leber, and Blackburn of this city.

1. The dates of the first and last cases of yellow fever in Louisville, during the year 1873, were September 22 and October 15, respectively.

2. The total number of cases in the city, 10.

3. The mortality, 5.

4. The mode of introduction was by rail in all cases, except one by boat, and all were from Memphis, Tenn.

5. The local influences here were all favorable to recovery, being among the better class of people, and no spread of the disease was manifested.

I am, sir, very respectfully,

P. H. BAILHACHE,

*Surgeon U. S. M-H. S.*

JOHN M. WOODWORTH, M. D.,

*Supervising Surgeon U. S. M-H. S.*



[Dr. D. P. FENNER, in charge of marine-hospital patients at Shreveport, La., has undertaken the preparation of a detailed report of the epidemic at that place, which it was hoped to have received in time for publication with the foregoing; but sickness and other causes have delayed its completion. The following statement, in the absence of that report, is compiled partly from Dr. Fenner's letters and partly from medical journals and other sources deemed trustworthy.]

The insanitary condition of Shreveport had attracted attention for some time previous to the outbreak of the epidemic, and was made a subject of much complaint by physicians and others. There was the usual absence of hygienic precaution and police; the accumulated filth of the city lay untouched for months; the streets were neglected and uncleaned; the sewerage was so defective that the refuse of hotels and boarding-houses was poured out upon the surface of the ground, and the whole city was enveloped in a disgusting odor day and night.

Prof. Joseph Jones, M. D., of New Orleans, in commenting on this subject, says: "Such is said to have been the sanitary condition of Shreveport, at the time of the breaking out of the epidemic; and if it be possible to generate in this latitude yellow fever by the combination of filth, heat, and moisture, the conditions were certainly present for the origin of the pestilence *de novo*." The spring and early summer seemed to have been as healthy as usual. The malarial fevers of the region did not attract special attention, either by their numbers or severity; but as the summer advanced, the continued heat of June and July, and the insanitary condition above noticed, aggravated their severity and they began to assume a more and more malignant character.

During the latter part of July, what has been characterized as a "stampede" took place among the sailors and river-boatmen at New Orleans, and numbers of them shipped on Red River packets, which were plying continually from that port to Shreveport, the navigation at that time being very good. On the 12th of August, according to Dr. Fenner, occurred the first case of yellow fever, of which he gives, substantially, the following details: Newton Walker worked and slept on the levee in a store which was closed, the firm having gone into liquidation; took his meals at a place next door in an eating and lodging-house, a common resort of the lower class of boatmen and of that class alone; was attacked with the fever on the night of August 12, and was first seen by the doctor on the 18th, at his (Walker's) brother's house, two and one-half miles from the city. Two children, who had not been away from the house, subsequently sickened and died, at the end of three and four days respectively, with all the phenomena of yellow fever well marked; the whole family were rapidly attacked and five or six died.

About the 15th of August several suspicious cases of illness among the boatmen were received in hospital; but as none of them died and there were no rumors of yellow fever at the time, they were diagnosed as cases of remittent fever. On the 19th of August it was reported that three men had fallen dead in front of the Mechanics' Exchange, on Texas street. Upon subsequent inquiry it proved that these men had been wandering about, sick; two of them lay down and died, and the other expired before he could be got to the hospital.

Yellow fever began to be now openly talked of. On the 22d a death occurred which was pronounced to be "without doubt" from the dreaded disease, and on the 25th two cases developed in a private family immediately across the street from the hospital referred to, and one case in Dr. Fenner's house, which adjoins the hospital. Cases also developed about the same time in Texas street, in and around boarding-houses used by steamboat-men; and in all places frequented by river-men the fever appeared early and spread thence as from centers of infection. In about ten days after the disease was recognized and correctly diagnosed, say, about the 1st of September, it had become epidemic and was followed by a general exodus, so that, it was estimated, the population was reduced in a brief space at least 50 per cent. On the 15th of September the epidemic reached its climax, the deaths on that day numbering 39; but for many days after the number fluctuated between 15 and 20; whole families were swept away

and commercial firms, partners and clerks, were literally blotted out of existence. About the 17th of September the fever began to attack the suburban population and appeared in the outskirts of the city, at Marshall, Longview, Greenwood, Summer Grove, Bossier, Minden, and throughout Caddo Parish generally.

There was a decided diminution in the average of deaths per day after the 24th of September, and on the 30th the decrease in the number of cases in the city marked the abatement of the epidemic. During the month of October the fever slowly declined, and intermittent fever and dengue made their appearance.

The following statistics of the epidemic are mere approximations, which may be corrected upon the publication of subsequent reports: Population, in July previous to epidemic, 9,000; during epidemic, between 4,000 and 4,500; of these 1,500 were negroes. Number of cases of yellow fever, 3,000; number of deaths, 759; of these about 120 were negroes. Mortality about 25 per cent.—W.]

#### SUMMARY OF THE YELLOW-FEVER EPIDEMIC OF 1873:

*Showing the localities, number of cases, and mortality, as reported by the Surgeons of the United States Marine-Hospital Service.*

Locality.	First case ap- peared—	Last case ap- peared—	Total cases.	Total deaths.	Mortality, per cent. of cases.	Cases in ma- rine hospital.	Deaths in ma- rine hospital.	Mortality, per cent. of cases.	Remarks.
New York, N. Y. . . .	May 23	Oct. 30	69	18	26.1	5	3	60.0	See report Dr. Heber Smith, ante, p. 101.
New Orleans, La. . . .	July 4	Nov. 18	394	225	57.1	24	13	54.2	Introduced by Spanish bark <i>Vaiparaiso</i> , from Havana.
Pensacola, Fla. . . . .	Aug. 3	Oct. 15	600	62	10.3	40	8	20.0	Supposed to be by deserting seamen from ship <i>Golden Dream</i> , from Havana.
Memphis, Tenn.* . . .	Aug. 10	Nov. 9	4,204	1,244	29.5	9	5	55.5	Brought by a traveler via Shreveport.
Shreveport, La. . . . .	Aug. 12	Nov. 10	3,000	759	25.3	7	3	42.8	By river-boatmen from New Orleans.
Mobile, Ala. . . . .	Aug. 21	Nov. 29	50	27	54.0	8	1	12.5	Brought from New Orleans.
Cairo, Ill. . . . .	Sept. 1	Sept. 25	43	17	39.5	5	4	80.0	By river-boatmen; no cases after establishment of quarantine.
Louisville, Ky. . . . .	Sept. 22	Oct. 15	10	5	50.0	.....	.....	.....	All from Memphis, Tenn.; nine by rail, one by boat.
Totals . . . . .	.....	.....	8,370	2,357	.....	98	37	.....	The general hospital mortality of yellow fever is greater than that here shown for marine hospitals, which latter is unusually favorable, considering the class of cases, and the fact that the mortality list is swollen by patients landed and carried into hospital already moribund.
Average mortality, per cent. of cases. . . . .	.....	.....	.....	.....	28.16	.....	.....	37.75	

\* Record for Memphis imperfect; the number of cases is not known, even approximately, while the number of deaths above given includes only those reported between September 14 and November 9, notwithstanding it is known that deaths occurred both before and after these dates. The number of cases here given is based on the average proportion of cases to deaths at the other seven places, and is certainly not over, but probably largely under, the actual number. It is believed that the same strictures would apply with equal force to the statistics of Shreveport.





















